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RECENT SCIENCE.

I. UNSUSPECTED RADIATIONS. II. INSECTS AND MALARIA.

I.

The sensation created five years ago by the discovery of the Röntgen rays had hardly begun to subside, and the patient, minute exploration of the newly-opened field was only just beginning when new discoveries of formerly unsuspected radiations came to add to the already great complexity of the phenomena, upsetting the provisional generalizations, raising new problems, and preparing the mind for further discoveries of a still more puzzling character. At the present time the physicist has to account for not only the kathode and the X or Röntgen rays, but also for the "secondary" or "S-rays" of Sagnac, the "Goldstein rays," the "Becquerel rays," and, in fact, for all the radiations belonging to the immense borderland between electricity and light. Nay, most fundamental questions concerning the intimate structure of matter are being raised in connection with these investigations; and the physicist cannot elude them any longer, because one of his most important principles, established by Carnot, and generally recognized since, seems also to require revision, or has, at least to receive a new interpretation.

So many different "rays" are now under consideration that it is necessary to begin by well defining them in a few words, even at the risk of repeating things already said in these pages and generally known. The "vacuum tube" is the starting point for all new radiations, and in its simplest form it is as is known, a sealed glass tube, out of which the air has been pumped, and which has at each end a piece of platinum wire passed through the glass and entering the tube. When these two wires are connected with the two poles of an induction coil, or the electrodes of an influence electrical machine, or a powerful battery, they become poles themselves. The tube begins to glow with a beautiful light, and a stream of luminous matter flows from its negative pole—the kathode—to the positive pole. These are the "kathode rays," the detailed exploration of which was begun years ago by Hittorf, but won a special interest when Crookes took them in hand, and once more when the Hungarian Professor Lenard began to study them in the years 1893-95. It is evident that the glass tube may be given any shape that is found convenient for some special purpose, and that the degree of exhaustion of air (or of any other gas with which the vessel

was filled before exhaustion), the forms and the disposition of the two poles, as also all other details of construction, may be varied at will, according to the experiments which are intended to be made. Now, if such a tube be placed inside a black cardboard muff which intercepts its light, and if it be brought into a dark room near to a screen painted with some phosphorescent substance, this substance begins to glow, although no visible light is falling upon it. If a wire be placed between the tube and the screen, its shadow appears on the screen, and if the hand be placed instead of the wire, dark shadows of the bones, but almost none of the flesh, are projected; a thick book gives, however, no shadow at all; it is transparent for these rays. Some radiations, proceeding along straight lines, must consequently issue from the tube and pass through the cardboard muff. Like light, they make the phosphorescent screen glow, move in straight lines (as they give shadows), and decompose the salts of the photographic film; but they are invisible and pass through such bodies as are opaque for ordinary light. These are the X or "Röntgen rays."

Various secondary rays originate from them. If the Röntgen rays meet a metallic mirror, they are not reflected by it, but simply diffused—that is, thrown irregularly in all directions; and, although they do not pass through metals as a rule, they may be made strong and penetrating enough to pass through thin metallic plates. But in both cases they will acquire some new properties which will depend upon the metal which has diffused them or through which they have passed. Some new radiations will be added to them, and these radiations were named "secondary rays," or "S rays," by M. Sagnac, who discovered them. On the other hand, if cathode rays have been passed through a perforated metallic plate, they also get altered, and in this

case they will sometimes be named "Goldstein rays." And, finally, there is a wide set of extremely interesting (also invisible) radiations emitted by phosphorescent substances. They were discovered by H. Becquerel, and are named now "Becquerel rays," or "Uranium rays." More will be said of them presently.

This is, then, the world of radiations, the very existence of which was mostly unsuspected five years ago, and which have to be explained—the difficulty being in that they link together the Hertzian waves which are now used for wireless telegraphy, the visible light, the invisible radiations in the ultra-red and the ultra-violet parts of the spectrum, to so-called "actinic" glow of various substances placed in the violet portion of the spectrum, and many other phenomena. Light, electricity, magnetism and the molecular movements of gases, liquids and solids—all these formerly separated chapters of Physics have thus been brought into a most intimate connection and huddled together by these wonderful radiations.

Thousands of most delicate experiments have been made, and hundreds of papers have been written, during the last five years, in order to determine the properties and the constitution of these different sorts of rays. Various hypotheses have been advocated, and yet scientific opinion is still hesitating, the more so as new discoveries are made all the time, and they show that we are not yet the masters of the whole series of phenomena brought under our notice. Upon one point only—and a very important one—a certain consensus of opinion begins to be established, namely, as to the cathode rays. Most explorers, including Lenard,¹ begin to be won to the idea that the cathode rays are the paths of very minute particles of matter which are thrown at a very great

¹ *Annalen der Physik*, 1898, vol. Lxiv, p. 279.

speed from the surface of the kathode and are loaded with electricity. Even under ordinary conditions, when an electric discharge takes place between one metallic electrode and the other, under the ordinary atmospheric pressure in a room, we see that most minute particles of the metal are torn off the negative electrode (the kathode) and are transported in the electric spark. Molecules of air join in the stream, creating the well-known "electric wind," and the air-path of the electric spark becomes electrified to some extent, the more so when the discharge takes place in the extremely rarefied medium of a vacuum tube.³ In this case the molecules of the rarefied gas, as also the metallic particles joining the current are transported, at a much greater speed, and we see them as a cone of light.

That kathode rays are real streams of particles of matter seemed very probable already in 1896, when the subject was discussed in these pages.⁴ Recent researches tend to confirm more and more this idea. They act as a real molecular or atomic bombardment, and they heat the objects they fall upon; thus, a thin lamella of glass which is placed in their path will be molten.⁵ It is also known from Crookes's experiments that when a little mill is placed so as to receive them on its wings, it is set in motion; and a back-current seems to be originated at the same time, as has been demonstrated by Swinton.⁶ They are deflected from their straight path by a magnet and are twisted along

the lines of force. Besides, a weak electrostatic force has upon them the same effect, showing that they are electrified negatively. Perrin⁷ and others who followed him have proved that these rays carry negative electricity with them. If they are taken out of the vacuum tube in which they originated to another tube, and are made there to fall upon an electroscope, they discharge it. Negative electricity cannot be separated from them; it follows with them when they are deflected by a magnet; it is *their* property—not something added to them.

Moreover, it was already noticed by Crookes, and confirmed since by Professor Thomson, that most of their properties do not depend upon the nature of the gas—air, oxygen, hydrogen, etc.—with which the tube was filled first, and of which a minute quantity always remains in the tube. They appear as a property of matter altogether rather than a property of this or that gas. And when attempts were lately made to measure the sizes of the particles which are carried in the kathode rays, it was found that they are extremely minute—much smaller than the probable size of atoms—while the charges of electricity which they carry with them are relatively great.⁷

All these facts have brought Professor J. J. Thomson to the conclusion that the matter which is carried in the kathode rays, is not ordinary matter, such as we know it in our every day chemical experience, but matter in a state of a high dissociation. We know that the

³ I chiefly follow here Professor J. J. Thomson, who has explained his views in several articles (Philosophical Magazine, October 1897, vol. xlv. 5th series, p. 293; 1898, vol. xlv. p. 528; 1899, vol. xlviii p. 547. Also Nature, 1898, vol. lviii p. 8; 1900, vol. lxii p. 31); and also Dr. L. Zehnder, the author of a *Mechanik des Weltalls* (1897), in his address before the Freiburg Natural History Society in 1898.

⁴ "Recent Science," in the *Nineteenth Century*, March 1896.

⁵ Goldstein's researches into the compound nature of the kathode rays and their effects deserve a special notice. They are published in several issues of the *Annalen der Physik* for the last few years.

⁶ Swinton, in *Philosophical Magazine*, 1898, vol. xlv. p. 387; Broca, *Comptes Rendus*, 1899, vol. cxviii p. 356.

⁷ *Annalen der Physik* 1898, vol. lxxvi p. 1.

⁸ J. J. Thomson, *Philosophical Magazine*, vol. xlv. p. 528.

molecules of all bodies in nature consist of atoms; but even these atoms, small though they must be, are giants in comparison with the particles transported in the kathode streams. Consequently, we must think that the atoms themselves are dissociated in the intensive electric field. They divide into what we may call the primary atoms of some primary matter out of which the atoms of all chemical elements must be built up, and these primary atoms are carriers of electricity.* Of course, not every molecule need be dissociated, and some experiments show that the number of dissociated molecules is really very small in comparison with their total number. If one out of each three milliards of molecules is in a state of dissociation, this will do to account for the facts and the measurements which have been made, although many more molecules may have been dissociated in the kathode stream only to be reconstructed after having exchanged atoms with their neighbors.

It must be said in favor of this hypothesis that dissociation under the action of violent electrical vibrations—i. e., the breaking up of molecules into ions, or elementary atoms carrying electricity with them—is familiar to physicists. Besides, if we cannot yet specify what we mean by our atoms "carrying negative or positive electricity," we may imagine that this means carrying a certain vibratory or, perhaps, spiral movement, or any other sort of motion which we prefer not to specify in order to avoid spreading conceptions which may prove to be erroneous. But we know for certain that gases, which usually are no conductors of electricity, become conductors under the influence

of electric discharges, as also of the ultra-violet light, or even after having passed through flames. In such cases they become able to transport electricity—that is, some motion or some state unknown, which we name electricity—from one spot of space to another. A stream of dissociated and electrified particles of matter rushing in the kathode stream is thus a very probable explanation—the more so as similar streams are already admitted in order to explain the electro-chemical decomposition of salts and many properties of solutions.† The kathode rays would then be "an electric dance of atoms along the lines of force," as Villari and Righi have expressed it.

One question only must be asked: Is it necessary to suppose that the molecules are so dissociated as to set free the "primary matter" out of which the atoms of all elements are composed? Theoretically, there is no objection to this view. Modern science knows that the atoms—or the "chemical individuals," as Mendeléeff would prefer to name them—are only treated as indivisible in the chemical processes in the same sense as molecules are (or rather were) treated as indivisible in physical processes. The modern physicist does not consider the atoms indivisible in the sense Democritus taught it, but in the sense in which the sun is an individual amid the boundless inter-stellar space. He is even inclined to admit that the atoms have a complicated structure and are vortex rings similar to rings of smoke (Lord Kelvin and Helmholtz), or minute systems similar to planetary systems (Mendeléeff).‡ The "dissociation of atoms" would therefore be admissible; but before ad-

* Professor Thomson names them "corpuscles," but this is hardly an appropriate name for such minute subdivisions of the atoms. To the biologist it conveys an idea of organization; and in physics it was used formerly as a substitute for "molecules."

† "See "Recent Science" in Nineteenth Century, August 1892, and January 1894.

‡ Let me mention in connection with this a brilliant article by Mendeléeff on "Matter," in the new Russian Encyclopaedic Dictionary published by Brochaus & Efron vol. vi p. 151.

mitting the ultimate dissociation advocated by J. J. Thomson, can we not find a simpler explanation? Several explorers are inclined to think so, and Dr. Villard points out one possible issue. The kathode rays are, in his opinion, mere streams of hydrogen atoms or molecules—the presence of this gas in all tubes, even the best exhausted, being explained by the particles of water sticking to the glass, or by the decomposition of the alkalis of the glass. One fact certainly speaks in favor of Villard's view; a small copper oxide plate, being so placed as to receive the kathode rays, parts with its oxygen (is reduced) just as if it had been struck by a jet of hot hydrogen. Besides, the spots where the rays fall upon the glass of the tube are blackened, and these black spots, again, are such as if they had undergone a hydrogen bombardment. Moreover, the spectroscope reveals the hydrogen line in the glowing tubes.¹¹ But all this, while proving the presence of hydrogen in the vacuum tubes, does not speak against the hypothesis of J. J. Thomson, which still remains, up till now, the most plausible explanation of the kathode rays.

And yet one feels that the last word, even about these rays, has not yet been said. Dr. Joseph Larmor was quite right when he remarked, in his suggestive address delivered before the British Association at Bradford,¹² that the study of the electrical discharge in rarefied gases has conducted us to enlarged knowledge "of the fundamental relations in which the individual molecules stand to all electrical phenomena." Up till now we took these phenomena in a block; we studied the sum total of the actions of an infinity of molecules in a certain direction. Now we are bound to question the molecule

itself as to its speed, its behavior and its constitutive parts; and we find that a mobility of its component parts must be taken into account instead of the rigidity with which we formerly endowed it.

The philosophical value of this new move in electrodynamics—the value of the principle of action being introduced into the theories of vibration of the formerly "immaterial" æther—is immense, and it is sure to bear fruit in natural philosophy altogether. Æther itself, after having resisted so long all attempts to seize its true characters, becomes dissociated matter, filling space and upsetting many an old preconceived idea. No wonder, then, if it takes us some time before our views are settled upon these new phenomena, so full of unexpected revelations and philosophical consequences.

If the kathode rays are in all probability streams of dissociated molecules which are thrown off the kathode, what are then the Röntgen or *X* rays? They certainly originate from the former, either in the spot where they strike the glass or, what appears more correct, within the tube itself, in the kathode stream. But are both of the same nature? Röntgen himself indicates many points of resemblance between the two, and considers them in his third memoir¹³ as "phenomena probably of the same nature." Lenard goes even a step further; he represents them both as parts of the same scale or of the same "magnetic spectrum;" the *X* rays, which are not deflected by a magnet, being at one end of the scale, while a series of intermediate radiations connect them with the kathode rays occupying the other end of the scale.¹⁴ Both provoke fluorescence, both produce sim-

¹¹ Dr. P. Villard, in *Revue Generale des Sciences* 1890, vol. x. p. 101.

¹² *Nature* the 9th of October, 1900, vol. lxxii p. 440, gives it in full.

¹³ *Sitzungsberichte of the Berlin Academy of Sciences*, 1897, p. 576; summed up in various scientific reviews.

¹⁴ *Annalen der Physik*, 1897, vol. lxxiii p. 253.

ilar photographic and electric effects, and both have different degrees of penetration through opaque bodies, which depend upon the source of electricity and the media through which they have passed. Moreover, the X rays are certainly not homogeneous, and consist of a variety of radiations.

And yet the many analogies which have been noticed between the Röntgen rays and the ordinary light stand in opposition to a full assimilation of the X rays to the kathode streams; and the opinion that, like light, they are vibrations of the æther takes the upper hand.¹⁵ These may be vibrations of a very short wave-length, perhaps a hundred times shorter than the waves of green light; or they may be "longitudinal vibrations," as Lord Kelvin had suggested at the outset;¹⁶ or, as Professor J. J. Thomson thinks, they may be a mixture of vibrations of different sorts—"pulsations" of the æther, as he puts it—that is, something similar to what is called "a noise" in the theory of sound.

Already in his second memoir Röntgen had indicated that his rays discharge an electrified body, both directly when they fall upon it, and by their action upon the surrounding air, which they render a conductor of electricity. This was an important remark, because the researches of the previous four years had firmly established that the violet rays—i. e., the short waves of light—as well as the invisible ultra-violet radiations, have the very same effect. A link was thus established between the problematic rays and common light, and some of the best physicists (Lord Kelvin, Righi, Perrin, Gug-

genheimer, Villari, Starke and many others) engaged in a minute experimental work in order to specify these analogies. The result was that the resemblance between the X rays and the short-waved radiations of light was proved.

A further confirmation of the same analogy was given by the discovery of the "secondary" and "tertiary" rays by the Paris professor, G. Sagnac.¹⁷ He studied what becomes of the Röntgen rays when they strike different metallic surfaces. They are not reflected by them, but only diffused irregularly; however, this diffusion differs from reflection, not only by its irregularity, but still more by the fact that the character of the "secondary" radiations (or "tertiary," if they have been diffused twice) is altered. They become more like ordinary light. Their power of penetration through opaque wood or the human flesh is diminished; and just as a phosphorescing surface which has been struck by ultra-violet radiations begins to glow with a yellow or green light—of a diminished wave-length, as G. G. Stokes had remarked it—so also the diffused secondary radiations behave as if they were of shorter wave-lengths than the rays which originated them. The space between the violet light and the Röntgen radiations is thus bridged over, their analogy with light becomes closer, and the hypothesis according to which they are treated as vibrations of the æther gains further support.

Many other curious properties of the Röntgen rays have been revealed during the last four years. The most interesting is that they are not quite "in-

¹⁵ See Gekler's objections against such an assimilation, based upon their different behavior towards electrified bodies (*Annalen der Physik*, vol. lxxvi p. 65), to which it may be added that the heating effect of the first radiations is very much smaller than the same effect of the latter (E. Dorn); and compare these remarks with the anode current, the existence of which was main-

tained by Crookes since 1801. Swinton (*Phil. Mag.* 1898, xlii p. 387) confirmed its existence, and Riecke (*Ann. der Physik* xlii p. 954) has measured its energy.

¹⁶ See *Nineteenth Century*, March 1896, where the meaning of this suggestion was explained.

¹⁷ He gave an account of his researches in *Revue Generale des Sciences*, the 30th of April, 1898.

visible light." When they are of a great intensity they become visible. However, the portions of our retina which are excited by them are the peripheral parts only, which contain more rods than the central parts lying opposite the iris. The cones or those constituent parts of the retina which are supposed to convey to our brain the color sensations, are, on the contrary, but very slightly, if at all, irritated by the X rays.¹⁸ Then the more perfect is the vacuum in a Crookes tube, and consequently the greater is the electrical force required to originate Röntgen rays, the more penetrating they are. In such cases they pass through metals, and Röntgen himself has photographed bullets inside a double-barrelled Lefauchaux pistol, while other explorers have obtained radiograms with rays which had passed through an aluminum plate 1.4 inch thick, and even a cast-iron plate nearly one inch thick.¹⁹ The inside of a watch which had a steel lid, the inner mechanism of a lock, as also both sides of a bronze medal, were photographed in the same way; while, on the other hand, Goldstein obtained beautiful radiograms showing the internal structure of a *Nymphaea* flower, of a hermit crab inside its shell, and so on.²⁰

But the chief progress was made with the medical application of the Röntgen rays. The half-mystical enthusiasm of the first days, when they were supposed to provide a new curative method, rapidly subsided. But their usefulness for ascertaining lesions in the bones, and for the discovery of the actual position of strange bodies—bullets, needles and so on—in the human tissues, has grown in proportion as surgeons have learned better to handle them.

The pernicious effects of the invisible rays on the skin are now eliminated by shortening the time of exposure which is required to obtain a good radiogram, and the morbid effects have been traced by Russian explorers (Danilevsky, Tarkhanoff) to electric radiations altogether, rather than to the X rays themselves. Formerly it required eighteen minutes to obtain a radiogram of the hand. Now, we are told that Dr. Donath obtains in two seconds a distinct radiogram of so difficult a subject as the shoulder and the chest; while Tesla with his powerful alternate currents could show distinct shadows at a distance of 165 feet from the vacuum tube. In the hands of an able surgeon—as Professor E. Bergmann illustrated before the Association of German Naturalists and Physicians in 1899—the X rays become a most precious means of exploration. The growth of the bones, from birth till matured age, could be studied with their aid, and the various causes which retard growth (rachitism, tuberculosis) or produce midguts could be ascertained. The fearful splintering of the bones by the modern bullets, and especially by the English Dum-Dum bullet, became known, and the radiograms of Bruns showing the effects of the Dum-Dum provoked on the Continent a unanimous indignation against this bullet. Many limbs were saved during the last Greek-Turkish War by Nasse and Küttner continually resorting to radiography. So also in the Soudan War. In fractures of the knee-cap the Röntgen rays have proved simply invaluable. But perhaps the best service they rendered was to demonstrate that in many cases it was far preferable to leave pellets of lead, small revolver bullets, and even Peabody-Martini bullets where they were lodged in the tissues instead of trying to get

¹⁸ Professor Elihu Thomson's address delivered before the American Association of Science in 1899 (Science, 1899, vol. 1 p. 236; translated in Naturwissenschaftliche Rundschau, xiv p. 585.)

¹⁹ Radiguet, Sagnac, Hall Edwards.

²⁰ Max Levy, "Fortschritte der Röntgenichnik," reproduced in various periodicals.

them out. In fact, Dr. Bergmann's radiograms prove that a bullet may sometimes remain even in the lungs without occasioning any trouble. Such was the case of a German soldier who had carried a bullet in his lungs for twenty-nine years, since 1871, without knowing it. The German professor goes even so far as to maintain that there are cases when a small bullet lodged in the white mass of the brain will remain there firmly imbedded, without producing any noticeable trouble, and that there is less danger in leaving it there than in extracting it.

If Röntgen's discovery had only the effect of alleviating so many human miseries, it would already rank among the great achievements of the century. But its profound effects upon natural philosophy are far from being yet exhausted.

Every one knows the phosphorescent match-boxes provided with a white surface, which is usually protected from moisture by a glass, and glows in the darkness making the box visible at night. Sulphide of lime is generally used for making such glowing surfaces, but various compounds of barium, calcium, strontium, uranium and so on possess the same property of glowing in the dark after they have been exposed for some time to light. They are said, in this case, to "store up" light energy, which they give away afterwards; this was, at least, the explanation that used to be given some time ago.²¹ Now, it was in this rather neglected domain

that Henri Becquerel discovered the wonderful radiations which have received his name, and which, owing to the speculations they provoked as regards the theory of matter, have engrossed for the last four years the attention of physicists, even more than the Röntgen rays themselves.

It will be remembered that a phosphorescent screen which began to glow in the proximity of a vacuum tube upon which Röntgen was experimenting led him to his memorable discovery. It was only natural, therefore, to see whether phosphorescent screens would not reinforce the X rays; and in the course of such experiments M. Henry noticed that a phosphorescent sulphide of zinc gave up radiations which, like the Röntgen rays, would pass through black paper, and affect after that the photographic plate.²² M. Niewenglow-ski, also at Paris, made the same remark concerning a sulphide of lime previously exposed to light.²³ Then, at the next sitting of the Paris Academy of Sciences, Henri Becquerel came forward with a work on the radiations emitted by phosphorescent substances,²⁴ and this first work was followed by quite a number of papers, in which the new radiations were studied under all possible aspects. Becquerel was joined in his researches by many others, and especially by Mme. Sklodowska-Curie and her husband, M. Pierre Curie, who soon discovered with the aid of the new radiations, two new elements, and by this time the "Becquerel rays" have already a bulky literature. During the past year nearly every week brought with it the discovery of some new and

²¹ The terms "phosphorescence" and "fluorescence" are rather indiscriminately used to describe glowing after an exposure to light, as the distinction between the two, proposed by Weidemann, cannot be maintained any longer. Other causes may also provoke "luminescence": the diamond glows after having been slightly heated, quartz after some rubbing, and gases when they are electrified. As to the many luminescent animals, such as the glow-worm, various marine animals and bacteria, we are not concerned with them now.

²² *Comptes Rendus of the Paris Academy of Sciences*, the 10th of February 1896, vol. cxiii p. 312.

²³ *Comptes Rendus of the Paris Academy of Sciences*, the 10th of February, 1896, vol. cxiii p. 288.

²⁴ *Comptes Rendus of the Paris Academy of Sciences*, the 24th of February, 1896, vol. cxiii, p. 420. Further communications in the same and subsequent volumes.

puzzling property of these radiations.²⁸

The main point of the discovery was that phosphorescent bodies emit not only the well-known glow, which is visible to our eye, but also invisible radiations, similar to the Röntgen rays. Some salts of the metal uranium, and the metal itself, need not be exposed to light for more than one-hundredth part of a second to begin to glow, and long after the glow has disappeared they continue to send out the invisible radiations affecting the photographic film for months, and even years, as it appeared later on, even though the salt or the metal remained all the time in a closed box locked in a drawer in a dark room. The Becquerel radiations are thus quite different from phosphorescence or fluorescence. They are similar in nature to the kathode rays and the Röntgen rays, with one substantial difference only. In the vacuum tube we know the force—electricity—which supplies the energy for setting the atoms or the molecules of the gas into motion; while here we see no such source of energy—the radiations continue months and years after the phosphorescent body has seen the light, and there is no notable diminution of its radiating activity. Besides, certain substances need not be influenced by light at all for sending out radiations, and this property belongs, as it appeared later on, not only to phosphorescent bodies, but to a great variety of substances, organic and inorganic, so that one has to ask oneself whether the Becquerel radiations are not a property of matter altogether.

The first experiments of Becquerel were these: A little lamina of the

double sulphide of uranium and potassium, which has a great phosphorescing power, was placed upon a black paper envelope containing a photographic film. A glass plate, or a thin plate of aluminum or of copper, was introduced between the two, and the whole was either exposed to diffused daylight or closed in a black box and put in a drawer. In a short time in the first case—in a few hours in the second—the photographic film would show that some rays had been radiated from the sulphide. They had traversed the paper and partly also the metals, though less so than the paper, and the plate bore the image or the shadow of the piece of copper.

The analogy with the Röntgen rays was thus evident, and further inquiry confirmed it. Like the kathode rays, the Becquerel radiations are deflected from their rectilinear paths by a magnet; but, like the Röntgen rays, they cannot be reflected, or broken, or polarized.²⁹ And, like the kathode rays, they render the air through which they pass a conductor of electricity; they carry electricity with them, and consequently it is most probable that they are not vibrations of the æther, but electrified particles of matter, or *ions*, like the kathode rays. And so we have the puzzle, or, at least, the quite unexpected fact, of matter radiating molecules without any electrical, or luminous, or heating cause provoking and maintaining that radiation or evaporation.

The Becquerel rays, as was just said, send electrified particles which are capable of neutralizing the electricity of other bodies with which they come into contact. The gold leaflets of a charged electroscope drop at the contact with

²⁸ The literature of the subject is already immense. The main contributions to it will be found in *Comptes Rendus*, *Philosophical Magazine*, and *Annalen der Physik*. Excellent articles for the general reader appeared in *Nature*, the 14th of June, 1900, and in *Revue Générale des*

Sciences, the 30th of January, 1899, by Mme. Skłodowska-Curie.

²⁹ In his first researches Becquerel thought that he had seen reflection and refraction of these rays; but now he has abandoned this idea (*Comptes Rendus*, 1899, vol. cxxviii p. 771).

them.²⁷ But Becquerel was not satisfied with merely stating this fact; he immediately devised a very delicate instrument for measuring the activity of different rays given up by various bodies. Perhaps he did not realize that he was thus endowing science with a new method of analysis, which would lead, like spectrum analysis, to the discovery of new elements; but in the hands of M. Curie and Mme. Sklodowska-Curie, this method really led to the discovery of at least one element, radium, and perhaps two more—polonium and actinium.

From the very outset it became evident that compounds of uranium, and especially the metal itself, prepared in a pure state by Moissan in his electric furnace, were possessed of the greatest radio-activity. Thorium with its compounds came next. As to the other elements, nearly all of which were examined by Mme. Sklodowska, they were all much inferior to these two. It was also noticed during these researches that, as a rule, the compounds were inferior to the pure metals themselves. One metal, however, the Bohemian pitchblende, as also two others of less importance—all compounds of uranium—proved to be much more radio-active than pure uranium itself, and M. and Mme. Curie, suspecting that the pitchblende must contain some new substance more active than uranium, began a most painstaking laboratory work in order to isolate that special substance. They obtained at last a metal, identical as to its chemical properties with bismuth, but far more radio-active, and they named it polonium in honor of Mme. Sklodowska's father-

land. Then, beginning once more, in company with G. Bémont, the whole research from the beginning, in order to hunt for another very radio-active substance of which they had suspected the existence, they obtained another metal similar to barium by its chemical properties, but still more radio-active, which they named radium.²⁸ And finally A. Deblerne has discovered lately by the same method a third element named actinium and chemically similar to titanium.²⁹ Mr. Crookes, while disagreeing with the Curies as regards their new elements, came also, after a long research, to some new element, or at least to some new variety of uranium, which he named "Ur X," and which in his opinion is neither polonium nor radium.³⁰ The new method of "radiation analysis" had thus completed its proofs.

Of course so long as these new elements have not been separated chemically from their nearest of kin—bismuth, barium and titanium—their existence must still remain doubtful. But the spectrum of radium has already been examined by Demarcay³¹ and by Dr. C. Runge under a very great dispersion; and the great German specialist in spectra found that radium really gives three distinct lines which belong to no other element.³²

The radio-activity of these new metals is really striking. For polonium it is 400 times, and for radium 900 times, greater than for metallic uranium. Radium illuminates a phosphorescent screen indefinitely, and its salts glow without requiring for that a preliminary excitement by light. F. Giesel, who almost simultaneously with the

²⁷ This fundamental property of the Becquerel rays was announced on the very same day by Becquerel at Paris (*Comptes Rendus*, 1897 vol. cxxiv 438) and by Lord Kelvin, J. C. Beattie, and Smoluchowski Smolan at Edinburgh, before Edinburgh Royal Society (*Nature*, 1897, vol. xiv p. 447).

²⁸ *Comptes Rendus*, 1899, vol. cxxvii p. 1215.

²⁹ *Comptes Rendus*, 1900 vol. cxxx p. 906.

³⁰ Proceedings of the Royal Society, the 10th of May, 1900.

³¹ *Revue Generale des Sciences* the 30th of September, 1900, gives a photograph of this spectrum.

³² *Annalen der Physik* 1900 4th series, vol. ii p. 742. Polonium gave no characteristic lines.

Curies obtained a substance that must be radium, saw the chloride and bromide of this substance, although chemically identical with the same compounds of barium, sending such strong rays that the shadow of a hand appeared on a phosphorescent screen at a distance of 18 inches and the rays pierced metallic plates 4-10 and 8-10 of an inch thick. Salts containing an admixture of the new substance were so phosphorescent that one could read in their blue light. As to polonium, although a pure specimen of it was as phosphorescent as pure radium, its invisible rays had, however, a much smaller penetrating power; even cardboard would weaken them.²²

The main interest of these researches is, however, in the problematic nature of the Becquerel radiations. Are they not a general property of matter, only varying in degree in different substances?—this is the question which is now asked. Some thirty or thirty-five years ago it was mentioned in some scientific reviews that various objects—a printed page or a piece of metal—left their impressions on a white sheet of paper if the two had been kept for some time at a small distance from each other. These experiments, which seemed to prove the existence of some sort of radiation of matter, interested me then a great deal because they gave support to a very ingenious theory, developed by Séguin, concerning the existence of infinitely small particles of matter dashing in all directions through space and penetrating matter. With the aid of these particles, Séguin endeavored to explain gravitation, heat, light and electricity. Now, W. J. Russell, continuing the experiments of Colson on zinc and other metals,²³ laid be-

fore the Royal Society, in the autumn of 1897, and later on, with more details, in a Bakerian lecture, experiments having very much the same purport. He found that certain metals (magnesium, cadmium, zinc, nickel, etc.) and certain organic bodies (printing-ink, varnishes) will act on a photographic plate by their "emanations," exactly as if the plate had been acted upon by light—the boiled oil of the printing-ink and the turpentine in varnish being the active substances. Remarkably clear photographs of a printed page and a lithographic print were thus obtained without the aid of light. Many organic substances act in the same way, and a piece of old dry board gives its likeness simply after having been laid for some time over a photographic film; while a plate of polished zinc, separated from the film by a sheet of paper, will send its radiations through the paper and give a photographic reproduction of its water-marks.²⁴

In what relation these "emanations" stand to the Becquerel rays cannot yet be determined. But it becomes more and more certain that, like the cathode rays, the Becquerel radiations also consist of material particles projected from the radio-active bodies and carrying electricity with them. They may possibly be accompanied by vibrations of æther of the nature of light, but the fact of a real transport of particles of matter is rendered more and more apparent by the researches of Becquerel, the Curies, Elster and Geitel,²⁵ and Rutherford.²⁶ The "emanations" from thorium compounds are even affected by draughts in the room. But these emanations are neither dust nor vapors. They must be atoms, or ions, of the radiating body,

²² *Physikalische Zeitschrift*, vol. 1 1900 p. 16.

²³ *Comptes Rendus*, 1896 vol. cxxiii p. 49.

²⁴ *Proceedings of the Royal Society*, vol. lxi p. 424. Bakerian lectures delivered on the 24th of March, 1898; *Nature*, the 28th of April, vol. lvii p. 607.

²⁵ *Verhandlungen der deutschen physischen Gesellschaft*, 1900, p. 5 summed up in *Naturwissenschaftliche Rundschau*, vol. xv p. 108.

²⁶ *Philosophical Magazine*, 1899, vol. xlvii p. 100; 1900 vol. xlv pp. 1, 161.

and they communicate radio-activity, and consequently the power of discharging electricity, to the surfaces of the bodies with which they come in contact. From glass that "acquired" activity may be washed away, while to other bodies it clings like a sprinkling of the "jack-frost" powder, and M. Curie is described in *Nature* as being unable for a time to make electrostatic experiments on account of this "acquired" radio-activity.³⁸ Moreover, the Becquerel radiations exercise a chemical action; they ozonify air, as they "ionize" it, and a glass bottle which contains salts of radium takes a violet color, thus showing that chemical processes are provoked by the radiations.³⁹

Many problems relative to the structure and *life* of matter have thus been raised by these researches. Various hypotheses are offered to explain them, and J. J. Thomson's hypothesis—a further development of his kathode-rays hypothesis—appears, after all, the most probable. The molecules of which all bodies are composed are not something rigid. They *live*; that is, an atom or a "corpuscle" is continually being detached from this or that molecule and it wanders through the gas, the liquid, or even through the solid;⁴⁰ another atom (or corpuscle) may next take its place in the broken molecule, and so a continual exchange of matter takes place within the gaseous, liquid or solid bodies, the wandering "corpuscles" always carrying with them the sort of motion which we call an electrical charge. Those atoms or corpuscles which escape from the surface of the body would give what we call now

Becquerel rays, and it would not be a simple coincidence that those two elements which possess the greatest atomic weights, and consequently have the most complex molecules, "possess" also the highest radio-activity. We know that in solutions the so-called unstable compounds play an immense part; they are continually broken up, losing part of their atoms, and are continually reconstituted as they take in new atoms. And we know that in living matter the most compound molecules—those of albumen—are those which are split up most easily, and that what we call life consists in a continual splitting up and rebuilding of these molecules. Are not the Becquerel radiations revealing to us that continual splitting and rebuilding of molecules which constitute the life of both inorganic and organic matter? These are the grave questions which natural philosophers are brought to ask themselves, and which will certainly require many more patient researches.

II.

Few human diseases are so widely spread and few so much paralyze the vital forces of man as malaria does, both in its distinct and its insidious forms. At the same time it is one of the greatest obstacles to colonization. Its ravages among the settlers in new countries, before the thickets in the wood have been cleared and the ponds and marshes have been dried, are simply incalculable; and one could lately read in a monograph on malaria in

³⁸ See E. Rutherford's paper in *Philosophical Magazine*, 1900, vol. xlix p. 161; also *Nature*.

³⁹ A salt of uranium may be submitted to absolutely any chemical transformations, but when you return to the salt, from which you started in your work you find in it the very same electrical radio-activity which it had at the start. Impurities do not affect it. The radiation seems thus to belong to the molecule of uranium, and

hardly to be influenced by external causes (Skłodowska-Curie. In *Revue Generale*, 1900, x p. 47).

⁴⁰ Compare with Roberts-Austen's researches on the permeation of solid metals mentioned in a previous "Recent Science" article.

⁴¹ Thorium, 232.6; uranium, 238.6. Both belong to the twelfth and last series of Mendeleeff. The atomic weight of radium must be greater than 174 (*Comptes Rendus*, cxxxi p. 382).

Caucasia that this disease, which is at its worst in the low and fertile portions of that territory, has contributed more to the repulse of invaders than even the inaccessible mountains themselves.⁴² Even in civilized countries, and especially in Italy, millions of acres of fertile land lie waste on account of the ague. It is easy, therefore to understand of what an importance is the discovery of the parasite which occasions malaria, of its modes of propagation and of the main agents of infection—the gnats.

It was the French doctor Laveran who, after a stay in a deadly malarial region of Algeria, discovered the malaria parasite in 1880.⁴³ True, that pigment-cells, which we should now describe as malaria-parasites, were observed in human blood as early as 1835, among others by Virchow; but their relation to the disease was not known. In 1881, Laveran embodied his researches in a book,⁴⁴ but its importance was overlooked. Bacteria attracted then general attention, and Laveran's parasite, not being a bacterium, was little thought of. He stuck, nevertheless, to his discovery, and was soon joined in his researches by Golgi (the Italian professor to whom we owe the method that led to the discovery of the neurons), as also by Marchiafava, Celli, Councillman, Sternberg and the Viennese doctor Mannaberg, who published in 1893 a full compendium of these researches.⁴⁵ Dr. Mannaberg proved in this book that the real cause of malaria is Laveran's parasite, and he told its most interesting life-history so far as it was then known.

The parasite of malaria is not a bacterium. It is one of the protozoa—namely, as it appeared later on, a coccidium, which, like all other members

of that family, undergoes in its development a series of transformations. It appears first as an amœba developed from a spore, and, like all amœbe, it protrudes pseudopodia and moves about. It is adapted to life within a red corpuscle of the blood, upon which it feeds and which it gradually destroys, leaving in a vacuole of its body its waste produce in the shape of characteristic dark pigment spots. It soon fills up nearly the whole of the red corpuscle, and then begins to subdivide into from six to twenty sectors, grouped round a central pigment mass like the petals of a flower. These sectors gradually grow round, separate, and each of them becomes a spore which gives origin to a new amœba; and this process of reproduction continues so long as the fever keeps hold of the patient. When the subdivision of the amœba begins, there begins also the paroxysm of the fever—once every twenty-four hours, or once every second, third or fourth day. This was fully proved, and it appeared, moreover, probable that the diurnal, bi-diurnal, tertian and quartan malaria were characterized each by a special variety of the same parasite.

Another important observation was made by Laveran, and next by Golgi. Besides these amœboid bodies Laveran saw that some parasites (*corps à flagelles*) would send out thin and long flagella which soon parted company with the mother body, and owing to a proper hellicoidal movement, disappeared in a plasm of the blood. This never happened, however, in the body of man, but only when a drop of his infected blood was drawn and placed on the glass plate under the microscope. Laveran noticed, moreover, minute "crescent-shaped bodies" which ad-

⁴² Pantukhoff, in Caucasian Calendar for 1890.

⁴³ Ten years before, Ray Lankester had discovered a similar parasite in the blood of batrachians.

⁴⁴ Nature parasitaire des accidents de l'impaludisme, Paris, 1881.

⁴⁵ Dr. J. Mannaberg. Die Malaria-parasiten, Vienna, 1893.

hered to the red corpuscles and looked very much like cysts, protected by a harder envelope. From fifteen to twenty minutes after these bodies had been placed under the microscope, they also gave origin to a great number of "flagella;" and this evolution, too, he remarked seemed to be accomplished only when the cysts were taken out of the human body.

It was only natural to conclude from these observations that the further development of the flagella may take place in the body of some other animal than man, and this consideration brought Laveran, in a book which he published in 1884, to the idea that, taking into consideration the quantities of mosquitoes in malarial countries, they may be the agents of transition of malaria.⁴⁶

This remark passed, however, unperceived. Many had the suspicion that gnats may play some part in the inoculation of malaria; the Italian peasants always thought so, and in the medical literature an American doctor, Mr. King, had advocated the same idea. But the complete life-history of the malaria parasite being not yet known fifteen years ago, the necessity of the mosquito or of some other living being serving as a host for the completion of the reproduction-cycle was not understood. Consequently, little attention was paid to the subject.

Help came now from a different quarter—namely, from an extensive series of researches which were made into the modes of reproduction of the tiny unicellular organisms, or protozoa, and especially of one of them, a coccidium

which infests sometimes the epithelium cells of the intestine and the biliary canals of the rabbit. It would be too long to tell here the history of these memorable researches, inaugurated by R. Pfeiffer in 1892,⁴⁷ and continued by Simond, Léger, Siedlecki, Schaudinn and many others.⁴⁸ Sufficient to say that two sorts of reproduction were found with this coccidium. One is similar to that just described for the malaria parasite. The coccidium grows, and then subdivides into sectors, each of which becomes a spore giving origin to a new individual. This is its simplest mode of reproduction; but there is also a more complicated one, during which a portion of the cells store a great quantity of materials, in order to give origin to minute cells playing the part of ovula in higher animals; while the others give origin to little lively bodies provided with flagella, which unite with what might be named the ovula of the former, and after that cover themselves with a protective layer, thus forming a cyst. These cysts are evacuated, and, after having been swallowed by another rabbit with its food, they give origin to spores, from which the original parasite is born.

A perfect analogy was thus established by this great biological discovery between reproduction in higher animals and one mode of it in the lowest and simplest unicellular organisms.

Exactly the same thing was found later on with the malaria parasite. Its simpler reproduction we have seen; but it has also a more complicated mode of reproduction during which some of the crescent-shaped bodies will be filled

⁴⁶ *Traité des fièvres palustres*, 1884; also Dr. F. Mesnil in an elaborated paper on "Coccidies et paludisme," in *Revue Generale des Sciences*, 1899 Nov. 6 and 7. I follow Dr. Mesnil in these lines.

⁴⁷ R. Pfeiffer, *Beiträge zur Protozoen-Forschung*: I. Die Coccidien-Krankheit der Kaninchen, Berlin, 1892. Koch's Mosquito-Hypothesis of malaria, p. 22.

⁴⁸ A bibliography of these works will be found in the already mentioned article by Dr. F. Mesnil in *Revue Generale des Sciences*. Schaudinn's researches were published in the *Abhandlungen of the Berlin Academy* 1898, and in *Sitzungsberichte der Ges. der naturf. Freunde*, Berlin, 1899, and were fully analyzed by Dr. Koenen in *Naturwissenschaftliche Rundschau*, 1900, vol. xv 4 sq.

with what corresponds to ovulæ, while the others will give origin to tiny organisms provided with flagella which join the ovulæ and form "oocysts." This process, however, seldom if ever takes place in the warm blood of man. It seems to require a cooler medium to stimulate it, and this medium is offered in the intestine of a gnat, after it has sucked the blood of a malaria patient infected with crescent-shaped bodies. The copulated cyst then furrows itself into the epithelium of the gnat's intestine; it grows and then bursts, giving origin to numerous spores ("sporozoites"), which are carried by the lymph to the salivary glands of the gnat; and when the insect next sucks a man's or a bird's blood, it introduces the sporozoites into the blood of its victim. Malaria follows; but without the gnat, in whose intestine one phasis of the life-history of the parasite is accomplished, malaria would not be transmitted so easily from one sick person to another.

For simplicity's sake I have given here the whole process as it is understood nowadays. But it is evident that when these researches were still in progress, it was the discovery of the complicated life-history of the coccidia which gave support to the mosquito hypothesis.⁴⁹ Then another group of researches also helped it. Danilewsky had noticed in 1890 the existence of a unicellular parasite, quite similar to Laveran's, in the blood of birds. Sakharoff continued his work in 1893, and Professor W. G. MacCallum and E. L. Ople undertook to study for this purpose American birds.⁵⁰ They found in them both the just mentioned forms of the malaria parasite; the amœba-like

being multiplying by subdivision and probably producing the fever which is said to recur in birds every third or fourth day and also the cells provided with flagella. MacCallum even saw under the microscope that sort of reproduction which Schaudinn and Siedlecki saw so distinctly with the coccidia.

More decisive steps could now be taken to verify the mosquito-hypothesis. It was endorsed by Dr. Patrick Manson who had demonstrated the part played by the gnat in the transmission to man of a filaria, and he induced, in 1895, Surgeon-Major Ross, of the Indian Medical Service, to verify that hypothesis. On the other side, a society for the investigation of malaria was formed in Italy, and the Italian explorers of malaria, Celli, Grassi, Bignami, Bastianielli and Dionisi, as also Dr. R. Koch, continued their work in the ague-stricken provinces of Italy. Dr. Ross conducted his inquiry in South India in a truly admirable scientific spirit. For two years in succession he used to breed mosquitoes from the pupæ, and to feed them on the blood of malaria patients, hunting afterwards in their organs for a parasite similar to the malarial "hemamœba" of man. He had already dissected a thousand of the brindled and gray mosquitoes—but in vain. One can easily imagine what it means dissecting a thousand gnats under the microscope, hunting for parasites in the epithelial cells of the gnats' intestines. And yet Dr. Ross did not abandon his work. At last, in August, 1897, he found in two individuals of the large dapple-winged species epithelial cells containing the characteristic malarial pigment. Preparations of these

⁴⁹ Several books were published about that time, besides L. Pfeiffer's work in order to familiarize doctors and veterinarians with these researches. Waisielewsky's *Sporozoenkunde*, Jena, 1896, G. Scheldemuhl's *Die Protozoen als Krankheitserreger des Menschen und der Haustiere*, Leipzig 1898, and Dr. Manson's *Tropical Diseases*, 1898, deserves special mention. Dr.

Laveran also published a work, *Traité du paludisme*, Paris, 1897, which contains a full bibliography of the subject. English translation, 1893, by J. W. Martin.

⁵⁰ Professor MacCallum, in *Journal of Experimental Medicine* 1898, vol. III 103 117; E. L. Ople in same periodical, III 79.

cells were sent to London and were recognized by specialists, including Laveran, as rendering the discovery of malarial parasites in gnats very probable.⁵¹

Professor MacCallum's discovery having been published in the meantime, Dr. Ross, now transferred to Calcutta, directed his researches towards the malarial parasites of birds.⁵² Some birds, as is known, suffer from malaria. Consequently, out of thirty healthy gnats raised from pupæ, ten were fed on much infected sparrows, ten on less infected ones, and ten on quite healthy birds. The results this time were most satisfactory. The malaria parasites were found in the gnats, and their evolution was followed as far as the presence of the "sporozoites" in the salivary glands of the gnats.⁵³

There then remained only to see whether infected mosquitoes would transmit the infection to birds. This was also done by Dr. Ross. He took about a hundred sparrows whose blood was examined beforehand and found free of malaria parasites. Half of them he then brought in contact with infected mosquitoes under a special net, while the other half he guaranteed from a contact with the gnats. Four-fifths of the first lot had their blood infected with the malarial proteosoma, but none of the second lot; however, when the birds of this lot were also ex-

posed to the bites of the infected gnats, they also got the parasite in the same proportion.⁵⁴ The proof was thus conclusive; and when the Italian explorers, as also Koch, repeated Ross's experiments on birds, they fully confirmed them.

The Italian explorers now made in their turn a further step.⁵⁵ They cultivated the malaria parasite of man in mosquitoes (*Anopheles claviger*) and studied the full cycle of its reproduction, as it has been told on a preceding page.

They made experiments in order to infect man with malaria through the intermediary of gnats. Several persons who had never before suffered from malaria—among them the explorers themselves—volunteered to sit in a room in which mosquitoes caught in malarial regions had been set free, and to be bitten by them. Some of these persons passed through the ordeal without infection, but others really got the disease, and one of them took it in a very heavy form. On the other hand, when Grassi with a family of workers who had come for work to an extremely malarial district, bringing with them their five small children (children are especially liable to get malaria), slept eight nights during the worst malarial season with an open window protected by a wire grate which excluded gnats, none of them caught the disease.⁵⁶

⁵¹ British Medical Journal, the 18th of December 1897, p. 1788. Dr. Ross's letter was followed by notes by Dr. Manson, Bland Sutton, and Dr. Thin. A further communication of Ross to the same Journal (the 26th of February, 1898, p. 550) announced the discovery of the same cells in two more gnats.

⁵² Dr. Manson, in same periodical, the 18th of June, 1898, p. 1575.

⁵³ See Dr. Manson's address before the British Medical Association at Edinburgh in July 1898 (British Medical Journal the 24th of September, p. 840). Dr. Daniels's Report about his visit to Dr. Ross and the researches they made upon Ross's specimens for determining the life-history of the parasite, is full of a deep interest (Nature, the 3rd of August, 1899, ix 332).

⁵⁴ Dr. Ross's lecture before the Royal Institution, the 2nd of March, 1900 (Nature, lxi. p. 522), in which all the exploration is told in detail.

⁵⁵ B. Grassi "Cultivation of the Crescent-shaped Malaria Parasite of Man in a Mosquito (*Anopheles claviger*)" and "On the Spreading of Malaria by Mosquitoes," in Rendiconti of the Academy dei Lincei, November 1898; Grassi, Bignamini and Bastianelli, "Further Researches, into the Development-cycle of the Malaria Parasite of Man in the Body of Mosquitoes," Rendiconti, December 1898; Grassi and Dionisi, "Development-cycle of the Haemosporides," December 1898; Colla's, "Yearly Report of the Italian Malaria Society for 1898," in various periodicals.

⁵⁶ Paper read at Munich in September 1899, before the German Association.

Then Grassi undertook a study—not yet terminated—in order to see which species of gnats, in different parts of Italy and in Sicily, carry with them the infection. The big *Anopheles claviger*, quite common in the worst malarial districts, proved to be the chief culprit. As to the common species, *Culex pipiens*, which was very much suspected of mischief, it proved, on the contrary, to be innocent as regards man; it carries about the bird parasite, but not that of man. Besides, Dionisi discovered the human parasite of malaria in some bats.

Further evidence now accumulated at a rapid pace owing to the combined energies of both the Italian Society for the Study of Malaria and the London and Liverpool School of Tropical Medicine. In order to prove that gnats are the chief agents in the spreading of malaria—not air, drinking-water, or emanations from marshes—it was necessary to show that men protected from gnat-bites could live during the bad season in a malarial district without catching the disease. Consequently Dr. Sambon and Dr. Low, of the London School, chose a most malarial and marshy spot in the Roman Campagna near Ostia, and volunteered to stay there during the worst part of the malarial season, in a gnat-proof hut, retiring to it one hour before sunset and not leaving it before one hour past sunrise. The experiment was quite successful; on the 13th of September both were found by Grassi in excellent health. As to Grassi, he made his experiment on a grand scale. He induced 104 railway employes who stay with their families in ten railway cottages in the deadly malarial district of Capaccio, near Salerno, to strictly follow his instructions. That is to retire to their cottages, rendered gnat-proof, at the same hours and to otherwise protect themselves from gnat-bites. Several of them had previously suffered

from malaria; nevertheless, on the 16th of September only three persons out of the 104 had contracted the illness.*

And finally the members of the malaria expedition of the Liverpool School, who had been sent under Dr. Elliott to Nigeria, after having spent there four months, living practically amongst marshes and in places regarded as deadly malarial, returned all in perfect health. Their only precaution was the careful use of the mosquito-nets at night.

The counter experiment, already made in Italy, was repeated in London under still more convincing circumstances. Gnats fed under Professor Bastianelli's supervision on the blood of a sufferer from malaria at Rome, were sent last July to London. A son of Dr. Manson volunteered to submit to their bites, and soon was suffering from a distinctly malarial infection; the microscope examination of his blood showed the presence in it of the malarial parasite.

Such is the present state of these researches. They certainly do not prove that there are no other causes of malarial infection but the bites of insects; but they strongly militate in favor of the assertion that insects' bites are the main agents in spreading the infection, and that all measures should be taken for the destruction of gnats in small pools and marshes near human dwellings, as well as all measures of protection from gnat-bites. With the plague at our doors, and the certitude that rats, mice, flies, gnats, fleas, etc., are active agents of its propagation, this discovery acquires a wide importance. As to the researches themselves, they offer an admirable illustration of the combined work of pure science and applied science, as well as of the international character of science divested of national rivalries. P. Kropotkin.

* Nature, the 11th of October 1900, vol. lxi p. 578.

"IN THE EXECUTION OF HIS DUTY."

It was a sweltering morning and the huge buttressed cotton-woods surrounding the outpost station rose ghostlike through drifting mist, which hid the forests behind them, when Lieutenant Urmiston lay propped up on the pillows of his canvas couch. Overwork, anxiety and climatic suffering had aged him beyond his years and worn his face into deep hollows, while there was a look of utter weariness in the eyes that glittered with fever. Through the open casement drifted the warm, spicy smell of the forest, a creeper-choked wilderness of eternal twilight, inhabited by devils, the natives said, and lately thrashed for weeks together by the tropical deluge. The room was beaded with damp; negro voices chattered somewhere below; while a curious oppressive feeling in the atmosphere, the height of the thermometer and the legions of insect pests would have shown that this was a typical outpost in the steamy bush of Western Africa.

A tall man in yellow uniform, whose regular features, straighter hair and soldier-like bearing, proved that, in spite of his color, he was not of pure negro race, stood listening respectfully while Urmiston with some difficulty gave him orders for the day. He was a sergeant of the Houssas, dusky Moslem from the hinterland, who with the blood of ancient Moor and Arab mingling with that of the mysterious Fellatah and bush tribes in their veins came south, cattle thieves, oppressed cultivators of the soil and the sons of petty emirs, to serve the British. A firm and judicious hand is needed to hold these free lances of the north who seek to serve the strongest master, and his friends at home would have been surprised to learn that the unobtrusive, quietly-spoken Urmiston, whose usual

reserve hid a depth of dogged courage and endurance, was a hero of theirs. With a handful of them he was expected to maintain peace, uphold the white rulers' prestige and put down fetich murder through leagues of unhealthy bush, and he did his utmost to accomplish it, wearing out mind and body in the process.

A Government surgeon, who had travelled many miles to visit him, lounged close by watching the pair with disapproval until he said irritably, "I suppose it's no use my saying that you will suffer for this, Urmiston. Any reasonable man would lie still and forget his business at your temperature. Well, you'll break down utterly some day, and, if it was not that I liked you in spite of your obstinacy, I would wash my hands of you."

"No, I am afraid it is useless," was the answer, and the ghost of a smile flickered in the officer's eyes. "You see my district is in a most unsettled state, and if I let go just now there would be bloodshed before any one took hold again. I am trying to suppress the instigators to another rising, and when that is settled there will be plenty of time to rest."

So the sergeant answered questions, and the surgeon frowned, until a clamor commenced in the compound, as a native messenger came running in. With shaking fingers Urmiston opened the letter he brought, read it over twice and then with slow deliberation rose up from his sick-bed, and bade a dusky servant bring in his uniform. The sergeant went out hurriedly, the call of a bugle rang across the steaming forest, and in answer to the surgeon's indignant questions, Urmiston said, "The southern tribes have broken out again. Lismore's hemmed in without provis-

lions and has sent for me. If they once disarm or murder him all the rest will join in."

"You are not fit to travel even, much less to fight," was the answer; "I warn you it will be suicide if you go;" and Urmiston answered, grimly, "It will be manslaughter if I stay. Lismore and the other men are starving too. Everybody is sick in this country, and, as you should know, nothing would be done here if each man made it his chief business to protect his health."

So, abandoning further remonstrance, the surgeon made ready to return to his own station, where he was badly needed, and Urmiston was helped into his hammock, where he lay with one foot in the stirrup, haggard in face and wasted in limb, a skeleton in khaki, inspecting his men, while the forest soldiers listened to what he told them, with approval. The bushmen had probably built stockades across their path—that was all the better, they said to each other. They had a long-standing account to settle with those bush heathen for comrades stalked and shot or treacherously poisoned, and under their white leader's guidance they had already taken such stockades in the rear, a manoeuvre which when successful is bad for the defenders. Besides, the dusky aliens had a blind confidence in the man who rarely lost his temper and was ready with some fresh expedient in each case of an emergency, that touched the choleric surgeon, who said—

"I believe, Urmiston, those brigands would go anywhere with you, right through to the Nile, if you wanted them. Well, it's an errand of mercy, and I wish you God-speed, if you must go."

The black sergeant gave an order, there was a tramp of naked feet in the muddy compound, the line of men in uniform, and woolly-haired bearers clad in almost nothing at all, opened out;

then, with a flash of sunlight on the rifle-barrels and the hammock lurching before it, vanished into the shadows of the forest. A march through the tangled bush of the tropics when lately beaten by roaring deluge, is beyond the powers of adequate description, and even to the sick man who was used to such things, it passed like a nightmare. For hours together they plodded ankle-deep in mire down narrow trails which wound in and out among the giant cotton-woods, with ropes of thorny creepers drooping from them and interlacing foliage shutting out the light of day. Then there were swollen rivers to be forded under blinding heat, and swamps where the grass grew neck-high to be floundered through, while the villages were deserted at their approach, and now and then some one hidden among the undergrowth fired broken cast iron at them from his flintlock gun.

All day Urmiston lay still in his hammock trying to suppress each sign of pain, and, wrapped in waterproof, leaned his aching shoulders against a cotton-wood trunk at night, with the pungent smoke of damp wood drifting about him, considering the tidings his scouts brought in. At times the acrid vapor, which irritated eyes and nostrils, almost choked him, but it was better than the swarming mosquitoes, and he had learned to disregard small discomforts. At last, towards sunset, one day of unusually trying heat, when no breath of moving air entered the dim shade and the dense, oppressive atmosphere was thick with mingled savors of wet earth and rotten leaves, Urmiston, aching with the pain which accompanies the fever in his back and limbs, plodded stiffly erect down the sloppy trail at the head of his men. The hammock had been sent to the rear now, for from terrified fugitives lurking in the bush, they had discovered that the beleaguered garrison was hard pressed, and the natives, having news

of their approach, had built a stockade across the road. This should lie somewhere close ahead, and there was need for caution.

On either side, flanked by angular buttresses of living wood, rose the mighty trees. Ropes of thorns and an undergrowth, which seemed freely garnished with hooks and spikes, filled each space between, and Urmiston, glancing about him with bloodshot eyes, could see that here an army of bearers with machets would be needed before they could make any attempt at outflanking the stockade. So, trusting to force his way through by stubborn valor or resourceful wit, he held on, and the tired soldiers growled to one another as they followed him. Then, as the light grew fainter, a scout came running back with news, and passing a bend in the trail, the little party stood fast before the stockade. Fallen trees and stakes laced with creepers stretched across the muddy road, great branches overhanging them, and an endless colonnade of giant trunks behind, but save for an odd glimpse of projecting gun-barrels, some of them galvanized, there was neither sound nor sign of life about it. Perhaps they came sooner than the watchers expected, or the latter were cunningly hidden to entrap them, for the breastwork rose before them silent and grim.

Urmiston gave an order, there was a click of bayonet sockets over rifle-muzzles, and the black soldiers vanished among the trees, while the white man walking forward, alone, save for one colored interpreter who was singularly loath to go, stood before the stockade, a gaunt and wasted figure about which the thin uniform hung as it were a frame, with a face that was seamed with lines of pain and great beads of perspiration dewing his forehead. Afterwards the Houssa sergeant would often tell how he watched his officer standing with left knee bent, one hand

laid lightly on the revolver butt, as though inspecting his men at drill, though no one knew better that sudden death was hanging over him. Still, Urmiston had learned that in any negotiations with recalcitrant natives an assumption of reckless fearlessness is a factor in the game.

"Who bars this road through the forest in defiance of the law?" the black interpreter rendered his master's message into the bush tongue. "In the name of the Government I demand a passage," and then the silence that hung over the forest was rudely broken.

Somebody laughed scornfully, there was a rustling behind the stockade, and woolly heads rose above it, while more gun-barrels were thrust through the interstices. "The white man is mad or foolish," a derisive voice said. "If he will give us all those bush thieves' guns, and the carriers, we may let him pass through. But we cannot hear; let him come forward while we send one to talk to him."

A black man wearing a red tennis jacket round his shoulders like a dolman above a ragged tunic with plated buttons stood up among the branches of a fallen cotton-wood and there was a growl from the soldiers as they recognized him. This was a well-known scourge of the bush, who had stripped the tunic from a murdered comrade, and wore it in each foray as a defiance to them. Then, when he beckoned, Urmiston, with one hand, which was needed there, on the interpreter's shoulder, moved forward, and the soldiers, slipping from trunk to trunk, stealthily followed him, for, as the sergeant said, "It is not wise to trust a bushman, and we knew he was going to his death if there was treachery."

Urmiston doubtless fully recognized this too, but he counted personal danger as little if the result might justify the risk, and had won more than one

bloodless victory by an exhibition of what appeared to be unreasonable rashness, and was not so. The bushman leaned down from among the branches, and the pair stood facing each other at some twenty yards' distance, the white man speaking sternly, though what he demanded none of his followers knew, until a thin red flash blazed out from the breastwork, followed by a squibbing of bad trade powder, and a charge of broken cast-iron struck spurts of mud from the trail. Whether this was part of a deliberate plan, or the individual effort of some irresponsible bush robber who was proud of his marksmanship, did not appear, but in any case the negro is dangerously fond of firearms, and when one started the rest joined in.

So log and trunk were marked by sputtering trains of sparks, and streaked with drifting smoke, there was a crash of overloaded flintlock guns, and though the negroes' aim is always wild, the black interpreter went down shrieking. It all happened in a few seconds, and the light was almost gone, but there was still enough to show the white man, who had moved a few paces back, turn suddenly round, and, calling aloud, stoop over his black servant. What he said was drowned in a burst of aimless firing, but the black soldiers needed no order, for a moment later he lurched limply forward, and fell with the revolver flung out of his hand face downwards in the trampled mire. Wild men, almost naked, with matchets or spears, sprang from the stockade, but they checked their race towards the fallen, for, with a deep-throated howl of wrath startling the forest and sinewy hands clenched on the rifle-stocks, a score of dusky men in muddy uniform swept towards them. Some of the assailants had seen those snaky bayonets at work, others had heard the tale, and they did not wait for that deadly rush of steel. But the

fire from behind the logs continued, and when the sergeant raised his officer, ragged potleg was whirring everywhere and an exultant shouting broke out, as another soldier, turning, caught at his side and then collapsed into a quivering heap.

The sergeant roared out sharp orders, some one assisted him in the lift, and, with three limp forms carried among them, the little party moved back into the friendly gloom among the trunks; neither apparently did any of the bushmen think it judicious to follow them. Groaning a little, Urmiston asked for his hammock, and when he had been lifted into it, wiping a red froth from his lips, he said in the native tongue, "I am hardly hit; this is our last march together, Karanah. But raise me in the hammock, there, with my shoulder higher; now give me the pistol that the others may not know. So, and because starving men will perish unless I bring them help, I may not wait for death while there is work in haste to do. Alive or dead, I am your leader; we will sweep that stockade, then you will carry me into Lismore's camp. Now tear down the awning that all may see me."

Karanah rent the plaited palm leaf aside, and if it was too dark for the rest to note the curious grayness that crept across their master's face, they could recognize him by his voice and attitude as in words that came very slowly with a gasp between he spoke to them. Then the big dusky alien bent down that the thin hand of the white man might touch his head, and when a deep growl rose up from those behind him said, "That is their answer. I, who serve the Prophet, am an emir's son, but because of the oath and because we have never found such a leader, I am the white officer's slave. So, with his hand upon my neck, I promise to do his bidding, and, living or dead, we will carry him into the camp in spite of the heathen."

"It is well," said Urmiston faintly, and that was the last his followers ever heard him say. The fire from the logs which had slackened, ceased altogether, though a haze of acrid smoke still hung heavily in the air, when in ominous silence a line of half-seen men moved out from the gloom of the cotton-woods into the trail again. They bore three hammocks with them, two of which swayed behind but, in spite of the carriers' protests, one went before, and in it the form of Lieutenant Urmiston was dimly visible. There was stillness in the forest save for a chatter of voices among the undergrowth and the soft patter of naked feet, until some one cried in warning, and once more the front of the breast work was flecked with flame. Lighted momentarily by the fitful flashes, black men with matchets and others ramming home the potleg down long flintlock guns swarmed about it, but none were skilful with the latter weapon, and now thick darkness had closed down.

There was neither shot nor answer from the men behind the hammock. They had long served a master, who, when it was necessary to strike, struck hard in silence. Beside, they could see his hammock, and no one gave an order until the sergeant Karanah cried aloud. Then a wild, hoarse shout went up, the hammock bearers panted as they commenced to run, and with a sudden rush of trampling feet the men from the north came on. Into the smoke and through it, they went, flintlocks squibbing before them, and a confused din, the thudding of ramrods, crash of flung-up branches, and clink of matchets, growing louder about the breastwork, until savage and breathless they reached the obstacle.

Fire blew in their faces, erratic, humming potleg whistled past, but it did not stop them, for while the rifle-butts fell thudding on each weaker spot and

the bayonets flickered in the light of torches above, dragged hither and thither by many hands, the hammock was forced up and over the fallen cotton-woods. Then there was a sudden explosion of bad powder, probably some fibre-cased bag, an evanescent column of flame which glinted redly on the bayonets, and afterwards a sound of fugitives smashing through the bush in headlong flight—and the stockade was won. Branches were flung down, heavy logs rolled aside, the bearers marched through the gap, bringing more loaded hammocks with them now, and presently the sergeant stood, a stately, smoke-grimed figure beside the fibre net in which his master lay.

"We have obeyed the order, and the way is open. The bushmen have fled," he said, but there was no answer from the hammock, and when some one brought a torch he called out sharply, and, regardless of discipline, the rest gathered round. Urmiston lay very still within, grimly clutching a revolver in his wasted hand, with two dark smears on his well-worn tunic and a stamp there was no mistaking upon his pallid face. Then a hush fell upon all who saw him; even the heathen carriers ceased their wondering chatter, for each man knew that Lieutenant Urmiston had led his alien soldiers victorious to his last attack, until the big sergeant raised his voice and said, "That was a man to follow, and had he bidden us we would even have gone down into the place of the last infidel after him." Then, standing stiffly erect, with one hand raised in salute, he added, "Peace be with you—master; still we obey the order. He was a brave man though an infidel, and Allah is merciful."

The carriers settled the hammock-poles upon their woolly heads, the tramp of feet recommenced, and in sudden wrath the little party vanished into

the gloom of the forest, while it was well for the bush tribesmen that they did not rally to dispute the way with them. Perhaps the story of how they had passed the stockade travelled faster than their march, or the besiegers had news of a relief force coming from the south, for when, long after midnight, they neared the beleaguered outpost there was only a feeble resistance. A few flintlocks sputtered harmlessly among the undergrowth, a Martini or two joined in, there was a clamor of negro voices, a sound of hurried flight, and after a sentry's challenge the gate of the compound was opened wide. Then, muddy, footsore and stained by powder smoke, with red torches blinking about them amid the shouts of the garrison the black soldiers marched in—a hammock going before them, and more loaded carriers behind.

A gaunt white man with a fouled revolver hanging from his wrist stood in the glare of uncertain light, a young subaltern leaned on a Martini near him, while a handful of men from the hinterland waited a little apart. He started when he noticed the reversed rifles, but something in the dusky soldiers' faces held him silent, until striding towards the hammock he said, "Sergeant, what is it?" Then raising his battered helmet he stepped back, saying hoarsely, "Good Lord! He is dead."

"Yes," said the alien soldier, standing beside the lowered hammock. "Our officer was stricken badly before the stockade, but he made us promise to follow him until we brought the food and cartridges into your compound gate. And, because we loved him we kept our promise. Now the carriers are bringing their loads in. This is how it happened."

"Poor fellow," said the commander of the outpost when the tale was done,

"and he was an only son! Well, such things will happen, and when my time comes may I be worthy of the same funeral. Still, Corlett, I wish some other man had the task of explaining matters to his father. Sergeant, carry him into the armory yonder. Choose two of those who served him best to stand guard over him, then fall out the rest. You have done well."

So, until the red dawn came, the commander of the outpost sat soaked in perspiration, writing and rewriting one letter among others under an evil-smelling kerosene lamp, while all that was left of Lieutenant Urmiston, who had escaped from the pains of fever and the eternal twilight of the bush, lay in state in the armory, with two aliens who served the Prophet standing motionless like statues in ochre and ebony, keeping watch over him.

One of the despatches written that night brought bitter sorrow mingled with pride to a white-haired Englishman, who sat staring at it with dimmed eyes until after many times reading the last line, "He did his work thoroughly and well, and I know no one in the service quite fit to fill his difficult post," he said brokenly, "My only son! Still he has done great things out there, and I must not grudge him."

The old man presently followed his son to his rest, but under a colored window in an English church which stands among cool green meadows and ancient elms, a brass tablet bears the inscription: "In memory of Reginald Urmiston, killed in Western Africa in the execution of his duty." Far off in the shadows of the dripping forest when the blue wood-smoke drifts about the drowsy camp, a black sergeant tells the story of how the dead man led those who trusted him across the stockade.

Harold Bindloss.

NOTES FROM A SENTIMENTAL JOURNEY.

The sentiment of the journey began at Genoa; or rather it may be said to have begun in France; for it was in the little French steamer, as it lay in the bay, leisurely loading its cargo long hours after the time announced for its departure; that tedium took wing, that crowds and custom-houses, noise and dirt, and all the ills of travelling passed into the far background of my consciousness; and the weary journey changed into a voyage of adventure. The extreme unpunctuality, I believe, worked the spell, but it worked only gradually. I was as impatient for the first few hours as if I had been in the Paris express; the desirability of reaching Toulouse by the day I had calculated grew and grew in my eyes; every fixed point in my journey, though I knew them to be only matters of whim, assumed a fictitious importance; until at last as the sun dropped and the hour drew on when the evening train should start, I stormed to the captain demanding to be set on shore immediately that I might take to the railway and some day arrive at my destination. The civil alacrity with which he acceded to my request, and the promptness of his order to bring up Madame's box and bicycle (that bicycle on whose bringing out of Italy I had wasted the morning hours) gave a chill to my ardor; I added more meekly, "unless, indeed, Monsieur could assure me I should reach Marseilles next day in time for the midnight train to Toulouse;" the midday one had seemed imperative a moment before. So much Monsieur le Capitaine thought he could safely assure me, though cargo remained to be shipped, and, as he gave me, with the utmost politeness to understand very clearly, the

desires of a passenger were on his boat of no straw's weight in comparison with the cocks and hens or even the boxes and barrels, that travelled as uncomplaining cargo—a wholesome dose this for the self-important human being accustomed to regard all means of locomotion as made for his convenience, and failing in their final end as they fail to secure that! At once the need of getting anywhere at any definite hour or day dwindled and vanished, and I acquiesced, not unwillingly, in the captain's opinion that, since I had come on board, the best thing I could do was to remain there. "We'll dine first, and then think about starting," was his final encouragement—another, but this time a pleasant, shock to my traveller's soul, hardened to meals snatched at stations, or shaken down in a restaurant car.

I returned to the upper deck to nurse a fresh mood in the growing dusk. By the time the bell rang for dinner I was priding myself on my newly-acquired philosophy, and I prepared with an introductory remark as to the deceitfulness of shipping agents, to air it upon my neighbor at table.

"Yes," he replied with a placid smile, "they promised me I should be in time for a business appointment in London ten days ago [I put my pride in my pocket]. I've been with this vessel just three weeks," he added. The salutary discipline of playing second fiddle to the cargo had brought my neighbor to these heights of philosophy. He looked a prosaic individual enough; intellectual converse had not shortened the way for him; the only English-speaking person on board, he could use no other language save a little Turkish and modern Greek. My advent loosed what seemed to be a natural loquacity.

He had been much, he told me, among the Turks, and he himself attributed his ease of mind to intercourse with them, "I've learned to be a bit of a fatalist," he observed. "What will be, will be; and we shan't quicken the machinery by crying out." As the dinner advanced I fancied, however, that the excellence of the cooking had helped, in his case, to fix the fates and keep him on board at the successive ports; and indeed he confided that though, having paid the whole fare, he had to have the full voyage, he must have eaten his money's worth long ago. The thought gave him evident pleasure. Gladly, I think, would he have talked the night out paying the arrears of so long a silence. Having travelled much, in the East and over ground quite unknown to me, he had seen, and readily recounted many marvels, both of Nature and of Man. But as the occasion of his wanderings had been material cares (I forget or did not gather his actual business) so it was the more material aspects of these marvels that had struck him. Immensity was for him mere size, and he wondered mainly over the vast monuments of expenditure, of outlay of time and trouble, dotted over the world's surface. The borrowed comment with which I wished him good-night was new to him.

"The world is so full of a number of things,
I'm sure we should all be as happy as kings,"

he murmured in meditative but dubious echo.

II.

For my part I was left to no chance companionship of my own or other nationality. The best of company, most excellent of comrades, I had with me in my travelling-bag. And he, and not I,

had determined the route; he, and not I, whose inclinations indeed were quite contrary, had resolved that Arles, that Avignon, Nîmes and Carcassonne—those places of great monuments and historic fame—should all be passed on the road and left to the conscientious sightseer. "Any Cook's tourist," he said, "can give you news of Arles or Avignon;" nor, readily though he welcomed all opinion contrary to his own, did I care to dispute the point. My eyes had been satiated through the winter with the great places and elaborate works of another land, and I gladly forewent now the prospect of big sensations for his promise of opening my mind and heart to the little incidents of everyday life. And he—the Essayist, the *Sieur de Montaigne*—became himself the chief sentiment of my journey. Through all my roundabout route I was travelling to his home in the Périgord, hoping to be welcomed and received like a humbler *Mlle. de Gournay*, as an adopted great-great-granddaughter.

At Toulouse he permitted a halt. The town was familiar to him from his youth; I believe he had studied there for the law. Yet it was not of him I was thinking as the train drew up in the early morning. I had dreamt of *Vanini*, "bellowing," says an eye-witness, "like an ox getting slaughtered," as the executioner tore out his tongue, previous to burning him; of *Calas*, broken on the wheel for an imaginary crime, of the settled persecution of his whole unhappy Huguenot family. I had recalled to mind the ugly pre-eminence of Toulouse in fanaticism—how, even in our own century, she had proposed to commemorate her most blood-thirsty massacre; how in the sixteenth a Huguenot was hanged out of hand wherever caught. And my thoughts had rested finally on the *Essayist's* tale (touched as was his wont with the sense of human vanity) of the student of Toulouse and his faithful

servant. The valet had not better ground for his heresy than that his young master could not be wrong.

A drizzling rain was falling, and the town was still fast asleep as I arrived. It was five o'clock, but that, as my double cab-fare taught me, was still night at Toulouse, just as in Paris or in London. I had expected to find the stir of early morning at an hour when I myself had recently been breakfasting among the lilies, bathed and fragrant with the night-dew of an Italian garden. Here was none of that freshened brightness, but the dreary unwilling air of a town about to be recalled to the day's toil.

At my hotel (I had chosen it haphazard for its name, the proprietor's, which had promised me local color and lack of fellow-tourists) a drowsy porter escorted me through dismal corridors to the room furthest removed, as I demanded, from the paved street. To my request for coffee, he promised me fervently a *rrechauffée*. The word rolled out of his lips so richly that only after his back was turned did the poor meaning penetrate to my understanding. The beverage was as unpalatable in the drinking as it had been gustable in the promise; but even as I swallowed it the word reverberated in my ear, and I realized from it alone that I was truly in the Midi. What a temperament of the race, I reflected, to persist and make itself felt in such surroundings! For alas, I was in no comfortable old-world inn, but in a third-rate commercial hotel. I had avoided the tourist to fall into the arms (metaphorically, oh shade of Yorick!) of the *commis-voyageur*.

Commerce has laid its effacing hand upon Toulouse. When at length the town awoke, I left my dingy room for the broad streets; and there, wandering along the Allées Lafayette, through the Boulevard Carnot, I found myself in a sort of provincial Paris, in a town that

might have sprung of Paris wedded to Manchester. Rows of huge shops, each more *Bon Marché* than the last, long lines of tramway, trees certainly and planted squares, but as it appeared to me, not of indigenous growth, but conceded in servile imitation of the metropolis. The Sentimental Journey changed in my eyes to a Fool's Errand. Not Death but Commerce, I meditated is the great destroyer; doubtless through all the south of France I shall find local color washed out and every trace of the past obliterated.

With such sad thoughts I turned a corner, and came full on the church of St. Saturnin. If the path of the Sentimentalist be closed, it reminded me, the way of the Sightseer is still open. "St. Sernin or Saturnin," says Freeman, "is unique in its interest"—the intelligent reader may refer to his essay. I studied the exterior carefully, resolved to have something at least for my journey. It was a huge edifice recalling with its dominant air of proprietorship (as though the town belonged to it, not it to the town) the church of St. Anthony at Padua. Surely once St. Saturnin was at Toulouse *le Saint*, as St. Anthony still at Padua is *il Santo*. Now that dominating air seemed to me one of the ironies of things—the persistence, as in a dead man's face, of an habitual expression after the spirit that it expressed has fled. The town I had been wandering through boasted assuredly other saints and worshipped another god. And yet, despite my conviction that here was a mere dead bulk, the air of the building began to impose on me. If it no longer dominated, it was at least indomitable, here in the very thick of opposing forces, holding them at bay and remaining, if only as a monument, untouched by the modern spirit.

I entered reluctantly, fearing a fresh disillusion. Inside, should I find white-wash, scraped walls, the church per-

haps made a *monument national*? Behold the delusion was not in the church but in the town. All that modern air, that chief trafficking, that worship of the gods Mammon and Opinion of the World, was mere outside show. Commerce was an intruder that had taken no real foothold. Here, in the church of St. Saturnin, was the real, the ancient and, it would seem, the undying spirit of Toulouse. And it was here, not as a spirit in exile, or holding at bay victorious forces, but at home, impugnable in its stronghold, untouched and scornful of the idle clamor of the modern town. The modern spirit might go air itself upon the boulevards, aye, and take with it Liberty, Equality, Fraternity, poor spectres that could not pass the sacred threshold.

The church is one unbroken nave, of extraordinary length. The Roman vaulting is unique in structure and unique, surely, in its effect of sombre suspended awe. The moment that I entered, too, was one of suspense. A closely packed crowd of kneeling worshippers, so dense and motionless as to seem a dark raised pavement, awaited the elevation of the Host. My eye travelled over them—not one had stirred at my entrance—and rested on the high altar, so far away that the figures of the priests were pigmy and their actions indiscernible. What ceremony were they enacting, what victim sacrificing? What jealous god were they evoking? A God of War, of Pestilence and Famine—no God of Love, no Father of Humanity.

The congregation remained bent in worship long after the suspense was broken and the mass ended. But I shook off my sense of dread, and walked the length of the church to the back of the high altar. I was reading a notice that promised to the faithful a certain remission of the pains of purgatory if they would visit the relics, for which the charge was fifty cen-

times, when the verger approached with the key. I expressed my regret that I was not one of the faithful, and could not, even if I paid my sixpence, hope for that solace of my future pains. His devout air changed of a sudden, and with the urbanity of a man of the world, he assured me that the relics (like all else in this church) were unique, and offered much interest also to the tourist. I was a sightseer, I remembered, and accepted his escort. The collection, I am bound to believe, is unique. The verger's urbanity—it gave place, moreover, to his wonted, if skin-deep, devotion, as he displayed the relics and retailed their virtues—could not, however, betray me to any expression of disrespect or incredulity. I had not forgotten the fate of a certain lawyer of Toulouse, who rashly noted the likeness between the bones of St. Amadour (preserved at Rocamadour) and a shoulder of mutton. The verger, for his part, felt he owed me an apology as he pointed out another object of interest, an unkind skit upon Calvin, carved preaching with an ass's head. "Madame must not take it amiss," he said, "since it was carved long ago, when party spirit ran high."

III.

I settled into my corner in the Bordeaux express with the sense of pleasant expectancy and the purpose of journeying into the past; of living, for these few hours of swift transit in the actual days of my comrade, the Essayist. Was not all this the region committed to Monluc to be pacified? Was it not here that he made his grim progress, with the two hangmen, his lacqueys, leaving bodies of Huguenots on the trees where he passed? One man hanged frightens folks more than a hundred killed, was his experience. To the Essayist, then magistrate at Bordeaux, he confided a different experi-

ence of life, an experience of the vanity and bitterness of regret after the death of his son. I remembered the deacon, whose extreme youth caused the penalty of death to be changed to a whipping; but the boy died under the alternative punishment.

Montauban, the first stopping-place, resisted even Monluc. It held out for three several sieges, and, however reduced to extremities, remained to the end a Protestant stronghold. It is now a thriving centre of commerce. Moissac, a little town that Monluc fell back on from Montauban, is sustained in the world by the excellence, I believe, of its grape-juice. Agen, where Jules-César Scaliger once wielded the sceptre of the empire of letters is distinguished now by its prunes. They have risen or dwindled, these and other more diminutive towns, not in proportion to their valor and strength under arms, but as their soil is productive or barren. Commerce, not creed, has determined their fate.

An incident of the journey opened conversation with the one other occupant of the carriage. I had taken summary stock of him at an earlier stage; a rough-hewn man he had seemed to me, brusque in address, careless and country-made in his clothes. I had set him down in my mind as a successful tradesman in some form; a certain air of self-consequence fitted not ill, I thought, with that character; he chanced besides to allude to his work-people. So, calling to mind the Essayist's advice to converse with each new acquaintance upon that in which he is conversant, I spoke presently of the trade of Toulouse. His face puckered and flushed. "Toulouse," he answered with acrimony, "was no city of commerce, a city rather of the old nobility." Surprised, I remembered one part of the town, the Delbade, I had especially noticed, and one house in particular; this time I had struck the

right vein. "Madame spoke, perhaps, of No. —, the Hotel de —?" I assented, though not sure of the fact. "It was the hotel of his grandmother, the Duchess of —." I studied his rugged face more attentively. The lines I now noted, as they pleasantly expanded, were not those of an astute and successful man of business, but rather of a knight of La Mancha. And a very Don Quixote he approved himself, as ill-adjusted to the times he lived in, as old-fashioned in views and sentiments, and as ready if need were to die for them. The fates were leading him, I believe, to fight against watering-hose in place of his prototype's wind-mills. The Republic served him for a dragon—for all dragons and giants rolled into one. Its days, he hinted, were numbered—he was going to Paris. Child-like and confiding conspirator! I might have had all his secrets for an ounce of diplomacy; but I had not the cue, and my interest, besides, was in him and not in his doings.

We walk truly, we human beings, each in our own self-made universe. To the Briton I had met on the boat the world was in the main a vast workshop; the world of this Loyalist had the King as its sun, and it was solely lit up in his eyes as it chanced to impinge on the fate of some one or other of the legitimate rulers of France. He also had travelled, he assured me, had been to England (to attend the funeral of Monseigneur—), to Monte Carlo (at the bidding of Monseigneur —). A reflex light was cast also, by sympathetic extension, on the homes or resorts of scions of other unhappy royal stocks. He knew Florence as the abode of the Countess of Albany (a strange woman's caprice, to give two successors to a husband of the blood-royal!). He was moved to real anger as his eye fell on my newspaper. The insolent push of the editor came to his mind—how, on the great day of "the late King's" fu-

neral, he had tried to gain entrance over the heads of men of good birth excluded by the smallness of space. Yet conspiracy put a check upon feeling; the editor was of the Party; "His sentiments, however, are excellent," he pulled himself up with. It distressed him that I should visit the Château of Montaigne, in the hands, he was sure, of some *parvenu*. Was there not the Château de Chambord? I was not turned from my route; but I accepted instead his advice as to an inn, a quiet hostelry, so it sounded, and highly respectable; he and his wife, and all the country nobility, put up there when they went to Bordeaux; the *cuisine* also was famous.

IV.

Here was Bordeaux. With my modest luggage on a lumbering omnibus, I followed on my bicycle in quest of this pearl of hotels. We turned up a side street—that's as it should be—but a paved one, I noted regretfully. I seemed a whole cavalcade as I drew up at the modest entrance, and the Boots hastened out to fling open the door of the omnibus with a civil air of welcome that fell strangely flat as he discovered it empty. He transferred his attentions to me, and in a twinkling—no, in a measured, quiet moment—I was conveyed to my room. The handiest of porters had unstrapped my luggage, the trimmest of maidens had brought me hot water—and I looked round on immaculate cleanliness, on daintiest furniture of the last century, on a bed—"The linen looks white and smells of lavender," quoth Venator, "and I long to lie in a pair of sheets that smells so." Even so longed I, though the scent was not that of lavender, but of the luscious flower of the lime. The merits of the cook, let me add, had not been exaggerated, and it was evident that they were appreciated not only by the pro-

vincial visitor, but also in the town itself of Bordeaux.

How good a thing was life as I turned in, at last, to my lime-scented sheets! The street, truly, was paved, but traffic was small, and an occasional rumble served only to rouse me from blessed oblivion to a fleeting sense of the joys of existence.

In the morning, what nectar of coffee, what daintiness of china and silver! I felt all expanding with charity as I sallied forth into the streets, those streets, my dear Essayist, that thy feet once trod. "No, indeed," answered the Essayist, "they trod something quite different. I know now, more than ever, that change is the one constant element." "But this," I objected, "is not change but development. Bordeaux was made by its commerce long before your day, and you know your own ancestors, that family famous for their honesty, made their money in commerce." "Then sameness is difference," he retorted: "Commerce now is not what commerce was then." The little brown volume had taken that morning a bodily form, and the ghost of the Essayist walked by my side, wrapped, as I thought, in the ancient black cloak that had once been his father's. I noticed the satirical point to his lips, a whimsical line from the nostrils, the kindly eyes so full of feeling behind their light air of scoffing. Only his words, as he commented on this modern world, were but pale and colorless echoes of the living phrases he had applied to the world that he knew. So perchance is it ever with ghosts. "Here at least is identity, the actual stones," I turned to observe as we stood in the ancient gateway, all that remains of the Palais de Justice. "With a difference"—he had the last word.

The ghost I had conjured up was too impalpable and pale; I longed for the Essayist in person, to discuss with him modern ideas. Would evolution, devel-

opment, continuity, be thoughts too alien to find a place in his mind; or how would he resolve them into his disjointed view of life? A better use of so unique an opportunity would it be to wile from him tales, more tales, of those fellow-magistrates in whose company he must so often have passed through this portal. Under how keen an eye they aired their self-sufficiency, gave their judgments for a friend, condemned for crimes they were ready next instant to commit! Through this gate he must have passed, in more genial converse, with La Boétie. I remembered that he had just returned, through this gate, from the law-courts when, sending to ask La Boétie to dine, he learned first of his friend's illness. I called to mind the details of that grave death-bed.

But these are sad thoughts. I roused my shadowy comrade from the painful reverie into which he had fallen, as once before in Rome when thinking on La Boétie, and bade him show me the point on the adjacent quays, where, as mayor in his mature age, of Bordeaux, he had watched all night for a rumored boat-load of rebels. "I was not so bad a mayor," he said, "though Biron, in my place would have had the whole town up in arms. And the event," he added "would very likely have justified his precautions, for his precautions would have produced the event."

My idle musings, my imaginary comrade, were sent rudely flying by an itinerant vendor who jostled against me with his basket. It was mere inadvertance, and the offender's meek apology would have disarmed anger, had I been in a humor to feel it. Truly whatever it be that produces events, our own individual mood it is that fashions the world's manners to us. Only the rose-colored optimism in which I was walking could have made all men that day so cordial and so kind. I had passed a whole morning (the chance encounter

roused me to realize) idling, without ostensible purpose, in the busiest quarter of a great sea-port, and I had met with no single rude comment, with not one offensive stare or inquisitive gesture. All faces were friendly; I was a welcome guest, no intrusive foreigner.

But time was escaping me, and tomorrow I must take to the road. I gathered my wits together with diligence, and finished the day in methodical search for the Essayist's traces, the site of his school, of the Eyquem's town-house. I visited his tomb, the statue raised to his honor, studied his hand-writing, the annotated essays in the library—and only the gateway, that I had lit on by chance, is seasoned in my remembrance with sentiment.

V.

Je vois bien, ma Dordogne, encore
humble tu vas

De te montrer Gasconne, en France, tu
as honte.

* * * * *

Vois tu le petit Loir comme il hâte le
pas,

Comme déjà parmi les plus grands il se
conte?

At Castillon-sur-Dordogne the river flows leisurely, and makes truly no effort at hastening its steps; but its full, broad, rolling bosom shows no token of humility or shame. The lines of La Boétie had roused a quite different image. Where was the thin, trickling stream that could not compete with the gay little Loir? "Is the river as big at Sarlet as here?" I asked of a woman who, like me, was leaning over the bridge. She had never, she said, been beyond her own parish, but she believed the river was still greater in other parts of its course. How had I come to imagine it small, the Dordogne? She was pliqued on behalf of

her river; the name left her lips as the name of a person beloved.

Rivers in France have indeed a great personality. They seem to gather up and embody the tracts that they water. Or they are themselves regions, not boundary lines, regions with their own specific inhabitants. *Goujon de Dronne, gremille de Seine*—but I forget the various races. No Frenchman, by the way, would ever have asked, "What's in a name?" He knows all its magic.

The woman by my side was silently watching the lapse of the river.

"There was a woman once, in my day," said the Essayist, "whose cross-grained and sorry-faced husband had beaten her. And she, resolved to be rid of his tyranny, even at the cost of her life, rose in the morning, accosted the neighbors as usual, dropping a word that they might see to her household, and, taking a sister she had by the hand, she came to this river"—the Dordogne—"took leave of her sister as in jest, and plunged headlong from the bridge [but it was not this bridge] into the stream, where she perished. And," added the Essayist, "what was more considerable, she had ripened this project a whole night in her head."

But that was at Bergerac, and happened three centuries since. This woman watching the stream might well be of as heroic a race, but she was not wont to be beaten. The pride of her carriage made the notion ridiculous. She was drinking in the beauty of the evening, enjoying the landscape, as any modern traveller, as I might, though she had seen it, and no other, every day of her life. Use had endeared and not staled it.

I was in the happy serenity, that particular evening, of a purpose accomplished, my mind unresisting to the pleasant bodily lassitude that follows a first day on the wheel.

Scarce arrived at Castillon-sur-Dor-

dogne, my night-quarters, the proximity of the Essayist's château had lured me again on the road. The heat of the day was over already as I rode down the valley. A beneficent valley! The rich soil was as eager to yield, as the glowing sun to call forth, all culture's produce. And the acres of yellow corn, in tall and serried ranks, the trailing vines in their brightest green—these fruits of man's labor, while covering the first face of Nature, did but embellish and not spoil her. Cornfields and vineyards went all up the sides and over the crest of that long ridge on one of whose brows I was to look for the home of Montaigne.

"Montagne," a peasant corrected me, and bade me ride farther. Corrected, I asked again for Montagne. "Montaigne," this time I was told, might be reached up the next lane to the left. This disaccord of the peasants, echoing the disputes of the philologists, gave me my first real assurance that the château I was aiming at was really that of the Essayist. I had forgotten the present proprietor's name, which all the world would have known, and at Castillon, neither mine host nor the friends he called to consult could tell me for certain whether this was the only Montaigne in the district. Nor did they know if there was a tower, and so far as they knew, no great author ever had lived there. And why in the world should not a dozen châteaux be called by a name derived from the hill-side they stood on? But no two could be called sometimes Montaigne and sometimes Montagne. Why not, in the name of all common sense? I could not see why, but I felt sure, all the same, of my quarry.

I prepared to ride on; but this second peasant arrested me. He was full of curiosity about my bicycle, wanting to know how much ground I could cover, and how quickly. He had seen these machines, but not close at hand. Bent

double with age and the weight of the sticks he was carrying (he had rested them now in the hedge) he looked decrepit and toll-worn as any tiller of the ungrateful North. Has the beneficent valley no blessing, then, for her nearer sons, for those in daily touch with her surface? Must even her teeming soil be tilled with such sweat? Has the peasant still need of his proof-armor of insensibility, as in the days when troops carried off the herds and ravaged the homesteads, and pestilence stalked through the land? "What examples of resolution," says the Essayist, "saw we not then in all this people's simplicity? Each one generally renounced all care of life; the grapes (which are the country's chief commodity) hung still and rotted upon the vines untouched; all indifferently preparing themselves and expecting death, either that night or the next morrow, with countenance and voice so little daunted, that they seemed to have committed to this necessity, and that it was a universal and inevitable condemnation." Their sole care, then, was for graves. It distressed them to see the dead carcasses scattered over the fields and at the mercy of wild beasts, which presently began to flock hither. "And even in everyday life," he goes on, "from these poor people we see scattered over the earth, their heads bent over their task, from them nature draws daily instances of patience and constancy, more pure and unbending than any we learn in the schools. How many do I ordinarily see that mis-acknowledge poverty; how many that wish for death or that pass it without any alarm or affliction? That fellow who turns up my garden, has this morning, perchance, buried his son or his father."

Alas, my dear Essayist, insensibility to pain—is it not also dulness to pleasure? How shall we improve the state of the masses, if we cannot instill discontent? How raise their standard of

comfort? "What use," quoth the Essayist, "to bring comfort of body with discomfort of mind?"

There was no discontent in the interest this peasant took in my wheel. He no more aspired after my easy-running than after a bird's flight, and thought as little of comparing with either his own enforced snail's-pace.

It was a rough lane that the peasant had pointed to. I wheeled my bicycle up it slowly enough. Steep and rough the Essayist reported the road to his house, remembering how he was carried home once in a swoon, after a chance skirmish and a fall with his horse. This scene of smiling prosperity was then in the very heart of the civil disorders; now the only possible danger was thorns on the path. The cool-headed Essayist could make use of his mishap, of his first taste of a swoon, to muse on the easy approaches of death. What moral, I wondered, should I draw from a puncture?

Out on the crest of the hill ran a light, well-laid gravel road, with vineyards and cornfields on either hand, and the barest dry ditch to keep their edges. Open to all the world lay the rich land. I rode through the outlying property, past the church and the village—houses which even a savage could count, for one set of five fingers would suffice—up the drive, and dismounted at the very door of the château.

Neither guard nor sentinel, "save the stars," had the Essayist, in those days when every other house was armed for defence; and in these so far as I can bear witness, neither gate nor boundary-line marks off Montaigne from the universe.

I had already passed the tower, that one piece of the ancient house spared by a fire—owing its safety, presumably, more to its place overlooking the entrance, than to any selective sense in the elements; only a line, now, of out-building, forming, as it were, one side

of a quadrangle, links it on with the chateau. The Essayist, too, I remembered, had to cross over a courtyard, if a happy thought struck him, to be noted down in his library. Successive rebuildings since his day, may still have preserved, as is claimed, the ancient outline. And the tower, now as then, has three views of rich prospect; now as then, an inhabitant might overlook a large part, at least, of the homestead.

Man is truly a thing of perversity! What more could one ask of any proprietor than to keep an old relic just as it was, to make it freely accessible to every enquirer, to student or idle tourist, antiquarian or mere traveller, in the by-path of sentiment? How had I not grumbled, had I been told that I could not see the library because Monsieur was reading there, or that the stores were kept in the wardrobe, and the housekeeper was away with the key, or—any other of the hindrances that might have arisen had the tower been still put to its original uses? As it was, I could study at leisure what had once been the library, the private sanctuary of the Essayist, reserved, even as a corner was reserved in his soul, from cares, civil, paternal or conjugal. I could mount to what had once been his wardrobe, descend to what had once been the room where he had slept when he wished to be alone, to what had once been his chapel on the ground-floor. Why did a cold chill strike at my sentiment? No greater sacrilege, surely, than to leave this monument just as it was. Cold sepulchre to how warm a spirit! Let them lodge the gardener there, stack wood in it—anything to link it on with the present life of humanity! Only the survivals perforce, in the face of neglect and misusage, are the true survivals to sentiment. The ancient spirit clings closer the more mutilated the shrine.

What image of the Essayist, I won-

dered, survived in the mind of the woman who was showing his tower? A curious compound, it appeared. He was the ancient proprietor, the original family (*she* knew nothing of Eyquem, or of any still earlier race of Montaignes), but surely also a species of ogre, to lodge by choice in a tower! "He kept his wife [so she informed me in gratuitous addition, I trust, to her other knowledge by rote] in the smaller tower [a species of buttress in the old wall] where we keep a few gardening tools."

"The passing of man is as the wind's passing." Pointest thou also a moral, poor ghost, to the sentence writ on thy ceiling?

The glamor of evening light was upon the country as I rode slowly homeward. I sat awhile before leaving the high ground, at the edge of a cornfield, to watch the sun sink behind the opposite ridge. A beautiful landscape it was, blue and purple distance to infinity, where the line of low hills breaks to let the eye through. And yet—it was not the landscape I had looked for. A more broken, varied and changeable scene, abrupt hills, more capricious twists in the valley, had made surely a more suitable setting to the winding path of the Essayist's spirit. These orderly lines might well have induced a more measured march of his pen. What had Nature here to set his mind so constantly dwelling on the shapeless and diverse contexture of Man? Perhaps the scenery, as the language, more to his mind was that up in the mountains—more hardy and venturesome, as the tongue was more pithy and virile.

VI.

I mused while the sun sank. That philosophy of the Essayist—he scarce would have given it so high-sounding a name—that humor of his then; it also has its reverse side.

The constant dwelling on the doubtful faces of things did not impair his own buoyant vitality. The disclosure of petty springs under far-reaching actions, of the strait links that tie to earth our wide-soaring intellect, of the mingled ineptitude and arrogance of mankind, did not deaden the zest with which he regarded life's spectacle. But a new generation, looking, or professing to look, with the Essayist's eyes, saw life dwindled already and impoverished, the smallness of the actual diminishing also the possible. A humorous recognition of vanity leads by one step to dry withering cynicism.

In those hard-and-fast times, with faith pinned to contrary banners, zeal flung headlong into irreconcilable camps, what better corrective and solvent could there have been than the sense of man's littleness, of the limited reach of his intellect and the low range of his purpose? Tolerance among men, honor among thieves! Yet tolerance is divided by a hair's breadth from indifference. A more effete age, losing its hold on illusions, its confidence in its own power of grasping, may lose also its hold on existence. A fanatic age is at least more alive than a decadent.

As the valley lengthened out in the evening light, and as I sat in the silent air, the placable soul of the Essayist showed itself to me again, in larger shape than of wont—less familiar and intimate, but more consonant now with the broad lines of the landscape. I saw no longer the laughing philosopher, laying bare the paltry machinery beneath the fine show, but a sage brushing cobwebs aside to disclose a fair region beyond. I felt no longer a dead weight of doubt, inhibiting action; but a cool hand passed over the fevered face of humanity, stilling delirium but restoring vitality, no longer a drag upon motive-power, but a resetting to new springs of action.

Is this, then, the mind's legitimate
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circle? Life has us at first in her hold, buffets us perhaps with hard circumstance, teases us oftener with fruitless expectation, or chagrins us with the inadequacy of her favors. Her hold shaken off, she may be viewed in peaceful detachment from the opposite side, from the refuge of philosophy. What if the return to life be possible? Without looking back, but completing the circle, may one arrive with forward face and eyes open, to embrace her again, though not again to attend her caprices? Not merely by the gift of illogical nature, but by deliberate choice, may life be accepted even after the complete view of her vanity? Vain circumstance, even poor human nature, would wear a different complexion if actively welcomed whatever it brought in all forms for the mind's power of energy—than when waited upon in passive expectancy. That tower of philosophy, fled to on the one side as a refuge, might command the country on the other as a stronghold, might become in very truth a citadel in the soul.

At least, the first step is reasonable—to choose energy, which is life, since life is all that is offered us, and negation is the only alternative. And that first choice grounded in the logic of reason, one is left perhaps afterwards to a life's logic, that moves not in syllogisms, to an inversion of the logical order, energy bringing faith in its train. It brings at least hope, the forerunner of faith, and trust, her attendant—trust no longer in appearance or circumstance, but a something underlying them and giving them worth.

As the peace of the evening stole over me, so a new vision of life entered my soul. I conceived it magnified in its smallness, a vast possibility casting its cloak over the poor actual. An illusion? An illusion, if it were one, whose feet were in reality, and the border of whose garment shed fragrance upon life.

A PARISIAN HOUSEHOLD.*

BY PAUL BOURGET.

VIII. REVELATIONS.

Hector had left his house absorbed in these thoughts and was walking in the direction of the church of St. Augustine when he noticed a woman running to meet him down the Rue de Lisbonne, and to his amazement he recognized his daughter's companion.

Fanny Perrin had been lying in wait for him ever since she had parted from Reine, unable to make up her mind either to return to the house and ask for him or to go away. She had let the minutes go by, oblivious of her breakfast hour, and what was more surprising in a person at once so punctual and so poor, of her next lesson in the Batignolles quarter. She was waiting to see Le Prieux come out, without having actually decided what she should say to him. But she awaited him with a beating heart, constrained, as it were, by something beyond her will, remorseful at the thought of betraying Reine's confidence and yet feeling it impossible to let this marriage go on of which Reine had hinted to her.

At least, she must reveal the actual truth to Reine's father. But how?—in what words? For this excellent creature whose existence had flowed on in monotonous calm, in the narrowest round of occupations, these last few hours had held more stirring events than her whole previous life. She had consented to accompany one of her pupils to a rendezvous! She was the confidante of a secret upon which that pupil's destiny depended—and this secret she was about to betray! No won-

der that the heavy features of her kindly face were working with excitement as she accosted Reine's father, and that her words tumbled over each other in an almost incoherent stream.

"Monsieur Le Prieux, you must excuse the liberty I am taking, but I must speak to you. I know that such a step does not accord with my position—" Then, in order to anticipate any cross-questioning: "Do not ask me anything, I cannot answer you—I ought not to—I ought not even to be here. But it concerns Mademoiselle Reine, who has always been so good to me and of whom I am so fond. There is a thing that you ought to know, Monsieur Le Prieux—you ought to know it," she repeated. "If Reine is forced into the marriage you have planned for her she will die of grief. She loves some one else. Do not ask me his name," she went on, with increased volubility: "I should not tell you, but do not force her to marry against her inclination. I tell you again that she will die of grief. Oh, heavens! there are the ladies! They will see me! Monsieur Le Prieux, never let Reine know that I have spoken to you—never, never!" And leaving her interlocutor literally paralyzed with astonishment, she fled, without turning her head, down the Rue de Lisbonne, like one who has committed a crime.

She had caught sight of the coupé suddenly starting from the porte-cochère, and before Reine's father, who had turned his head at her exclamation, "There are the ladies!" had recovered his self-possession, the carriage did in fact pass him, the horse going at a walk. Le Prieux saw that the coupé was empty, and hailed the coach-

* Translated for The Living Age by Mary D. Frost.
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man, who stopped to reply: "The ladies will go out in half an hour. Madame has given me a letter to take to Monsieur Crucé."

"I am going in that direction myself," Monsieur Le Prieux said, taking the letter from him; "You can return for further orders and tell Madame that I have taken charge of the commission."

These two brief scenes—the arrival of Fanny Perrin, her speech and her flight, on the one hand; on the other, the appearance of the carriage, his stopping it and taking charge of the letter designed for Crucé—had followed each other so rapidly and unexpectedly that Hector might have fancied he had been dreaming but for the letter he held in his hand. In seizing it he had obeyed a sudden impulse—he the man of reflection, *par excellence*. He knew only too well what it contained, yet he gazed at the address in a sort of stupefaction.

"To Monsieur, Monsieur Crucé, 96 Rue de la Boétie," and below, "By private hand. In haste." Mathilde had retired at once after breakfast to write this note with his consent. Why then had he intercepted it? Why was he now proceeding with a hurried step through the Rue de Lisbonne, in the hope that Fanny Perrin had waited for him, that she would reappear and speak to him again? What could she say to him farther than he did not already know? The few words she had spoken corresponded too absolutely with his own sentiments, their tone was too evidently sincere for him to doubt their truth. As to the name which she had refused to reveal, did he not know that the young man beloved by Reine was Charles Huguenin?

When he had become convinced that the music-teacher would not return Hector hailed a cab and gave the driver an address that was neither Crucé's nor that where his committee was to meet, but Charles Huguenin's lodging in the Rue d'Assas. As to Madame Le

Prieux' letter he had already torn it into fifty pieces and the wind swept the scented fragments away as Hector sped along, a prey to the most violent emotions he had experienced for years. "No," he was saying to himself, "she shall never marry against her will. She shall not become Madame Faucherot. I will not have it—I will not have it!" Against whom was his resistance directed in this spasm of resolution? His inward monologue went on, thought answering to thought with that involuntary logic which sometimes disconcerts all our previous ideas: "I knew it was impossible for her to be marrying Faucherot unless she was forced into it—forced?—she thought herself forced? and by whom? We have always left her free. Just now we begged her to wait." Against what thought was the father defending himself, as he repeated in his own mind that lying "we"?

"And it was not in us she confided; it was a stranger—she does not know then that her happiness is our only care, that we live only for her. And yet I spoke to her as she was on her way to talk over this marriage with her mother. She understood me—at least she seemed to do so. I can still hear her saying, 'How good you are, how I love you!' And then such silence, such distrust! It is inconceivable. Perhaps she thought it was Charles who had asked her in marriage, and finding herself mistaken had an access of pique, who knows? of despair— She fancied her cousin did not care for her."

Then he attempted to argue with himself: "Is it really Charles whom she loves? I shall soon know. But how? What shall I say to the young man? What if, on his side, he has never thought of his cousin? In any case I will not permit that other marriage—I will not have it."

At the moment that Le Prieux was

repeating this vow to himself the cab was rolling along the pavement of the narrow Rue des Saints-Perès, which has not altered in thirty years, except where it adjoins the Faubourg St. Germain. The journalist's labors rarely permitting him any drives except on business, he seldom found himself in this quarter, so full of memories of his first coming up from Chevagnes to Paris. He had lodged at that time at a small hotel in the Rue des Beaux-Arts, which in his youthful enthusiasm he had chosen for the sake of its name, "Hotel Michel-Ange."

And now Reine's father was seized with a sudden longing to see once more the street close by, so associated with the dreams and illusions of his youth; what connection was there in his mind between these haunts of his twentieth year and the step he was about to take to save his daughter's twenty years from an odious marriage? Did he suddenly realize the difficulties of his undertaking, and wish to gain a little more time for reflection? Or was it that, dreading the struggle he would have to sustain on his return home, he was driven by a secret instinct to seek fresh courage from the spirit of his former self, that Le Prieux, so passionately devoted to art and the ideal, so utterly a stranger to worldly calculations and compromises?

Certain it is that on reaching the Rue Jacob, he dismissed the carriage and set out on foot for the abode of his youth.

He was passing through one of these strange crises when the resemblance—the identity even—between our own destiny and that of our parents or our children awakens in the depths of our being an intense and haunting consciousness of race; when, having to face some misfortune which our father endured before us, or seeing our child about to suffer from a blow that we have ourselves borne, the profound tie

of blood is revealed to us and stirs our hearts strangely. Applied to the past, to those who have bequeathed us their virtues and their weaknesses, this feeling results in a mood of pious melancholy, which pardons all wrongs and is grateful for all benefits. Turned towards the future, towards those to whom we have transmitted this soul of the race, of which we are but an atom, the impression is transformed into a profound and poignant longing to spare them, if it may be, this inheritance of pain. Thus all pass through indefinable hours when we scarce know whether it is our own fate or that of our father or our child which is at stake. And after this fashion, Hector, as he wandered through these old Paris streets and past the abode of his student days which, with its unchanged aspect, called up visions of his far-off youth, could scarcely have told whether it was of himself or his daughter that he was thinking, so insupportable seemed the analogy between his lot and that which threatened her.

What did the Hotel Michel-Ange say to him, as he stood motionless before it, if not that in one of its poor rooms—the second on the third floor, counting from the right—had lived a youth with as sensitive a nature as Reine's, capable, like her, of the highest and most delicate emotions, and yet incapable of maintaining in the struggle of life that ideal of art which had been the romance of his youth, as Reine, under the first shock, had been unequal to preserving the ideal of love which had been hers?

What element of weakness was hidden in the depths of their natures which made them at once so delicate in their way of thinking and so powerless to model their lives according to their hearts? But was this weakness in them? Was it not simply that they had had to wrestle with a will stronger than theirs? No, the youth who came

up from Chevagnes to conquer fame by creating a master-piece in the attic of the miserable Hotel Michel-Ange was not a weakling. He was an ingenuous youth who could not measure the fearful distance which separated him from his dream, but Hector did himself justice after all these years, and recognized that he had been also a patient, tireless worker, one who might, after all, have realized his dream in a measure if— and a woman's face rose before him, whose black eyes flashed imperiously, whose proud lips had the implacable curve of domination, whose beauty was that of an idol commanding homage. Was it indeed she who had wrecked his life? Was it she whose imperious authority caused Reine also to bend to her wishes? This double vision was so painful to the artist, to the father, that he repelled it with the whole strength of his life-long and ardent love for the woman whom he had passionately worshipped and obeyed for so many years; and turning away to walk in the direction of the Rue d'Assas, he reasoned thus:

"The blame is not with my poor Mathilde; she never could have known how I yearned for a different life. When did I ever speak to her of my longings? She is a true, upright, devoted soul. She believed that all was for the best then, just as she now believes that all is for the best in this Faucherot match. The fault has been mine—in my silence, in the timidity which has always prevented my showing my real aspirations even to her. Reine is like me in that too. Even to me she has never spoken of her love for her cousin. Now I must have positive facts, an avowal—Mathilde will then be the first not to desire this marriage which caused me an instinctive horror from the first. Good heavens! If only Charles is at home. No doubt it is he whom she loves. Among all the young men whom we see he is the only one

worthy of her—and how happy they will be down there!"

Hector was entering the Luxembourg gardens as these thoughts passed through his mind, and his steps unconsciously followed the path he had trodden so often of old, when, homesick for the oak-woods of Chevagnes, he had sought these gardens to get near to nature, to gaze at the trees and to dream.

All at once he found himself at the end of the avenue of ancient plane-trees, where stands the monument to the powerful but pathetic genius of Eugène Delacroix. Those noble trees, so beloved by him of old, now stretched their bare giant boughs into a frozen sky. And as if by contact with these mute witnesses of his youth, the poet long dead awoke in him, his thoughts turned with unutterable pathos to the ceaseless flight of time, to the constant succession of summers and winters, of leaves and of men. Certain verses of Sainte-Beuve's, long forgotten, but in which he had once delighted, came back to his memory and to his lips.

Simonides after old Homer said:

The generations on their flight are sped
Like to the forest leaves that green appear

An hour, alas!—the next, all brown and sear,

The north wind scatters them; anon,
The spring

Sees others green awhile, then withering—

He had often repeated on this very spot, this elegy of the least appreciated of our lyric poets, when he was himself at the age of fresh hopes and bright beginnings, as Reine and Charles were now—an age so brief, hopes so quickly blighted, beginnings so soon brought to an end. Let these children at least owe to him, not to lose before fully tasting it, this brief hour of youth and love!

And now he recalled the glances he

had seen Charles cast upon Reine, her agitation when he did not appear, a hundred little signs of her feeling towards him—signs which he had summed up when speaking to his wife of the relations between the two cousins, in the single sentence: "I have impressions." At these thoughts the father's blood kindled, as if the love of the young pair for each other warmed him with its flame.

He resumed his walk in the direction of the Rue d'Assas with a more alert step; and his heart was beating fast as he asked the concierge at Charles's lodging if Monsieur Huguenin was at home. He was in, and the father's emotion increased to such a degree that he was forced to pause before ringing at the door upon which was nailed a modest card inscribed:

"Charles Huguenin, Advocate."

Then he rang; immediately he heard steps approaching, the door was opened and Charles stood before him. On recognizing him the young man turned pale, and leaning against the door stammered out with an emotion which at once betrayed his secret: "You, Monsieur Le Prieux, you—! Oh, how I thank you for coming!"

As he pronounced these words Charles was still carrying on the train of thought which had occupied him ever since his cruel interview with Reine. He had roused himself from his first access of despair, with the energy of a love that knows itself returned. He had risen from the bench on which he had flung himself, saying, "I love her; I am sure she loves me. I cannot lose her like this!"

He had returned precipitately to the Rue d'Assas as if half hoping to find a letter there from Reine—a mad hope which proved how sure he was, in spite of all his denials, of his cousin's heart. No message awaiting him, however, he

had wept over his disappointment in the solitude of his student-lodging. Then he had brushed his tears away courageously, and set about reflecting what his next step should be. The passions of a southerner of pure race, such as he, are almost invariably accompanied by a lucidity in their ardor which recalls the glowing clearness of their skies as well as their Latin birthright. Thus even in his anguish, Charles desired to think calmly, and forced himself to face the indubitable facts of the situation. The first, the most evident of these, to which he clung as with the instinct of self-preservation, was that Reine loved him. The second, no less evident, was that some obstacle had suddenly risen between them. He could fix its appearance at no more than forty-eight hours back, since no such obstacle had existed when he and his cousin became tacitly betrothed. The fit of mad folly which had driven him, two hours before, to asperse Reine's constancy, was entirely dispelled. He believed her now to have been sincere in engaging herself, and sincere in imploring him so passionately not to enquire into the nature of the mysterious barrier from which she shrank in such terror. This was the third fact; the fourth was that a marriage with some one else was in contemplation. That this projected marriage dated from within the last two days, Charles again did not doubt; otherwise Reine could not have revealed herself to him as she had on the night of the ball. That her parents were closely concerned in this marriage scheme, Charles inferred from Madame Le Prieux' not having told her daughter of his mother's letter. At the moment, carried away as he was, by a fury of jealousy, he had not recognized the importance of this singular fact. He understood now that the silence of Reine's mother implied a deliberate intention of depriving the girl of any liberty of choice between her cousin and this

other suitor. Who was this other? Upon what grounds did his claims rest? Here Charles's imagination was brought to a pause. He realized that Madame Le Prieux had found some means of coercing Reine by terrorizing her; but he could not see into the reasons which sprang from the inner history of this household of "the unclassified," to adopt the term happily invented by one of the most indulgent historians of Parisian life. He had turned this enigma over and over in his mind during these first hours of passionate meditations, and this mystery had only led him to a still deeper one; why had Reine's parents deigned to vouchsafe no explanation to him, Charles, now that they knew of his hopes and feelings through his mother's letter?

He had reached this point in his ineffectual analysis, when the sound of the door-bell made his heart leap in his breast. He had rushed to the door with his wild hope of a message from Reine revived again; and on finding himself face to face with Monsieur Le Prieux, had broken forth into that explosion of gratitude so unintelligible to the new comer. But what was only too intelligible to him after Mademoiselle Perrin's revelations was the distress he perceived in Charles's aspect. This evidence of the young man's love for his daughter agreed so well with his secret wishes, that his tones were full of indulgence and fatherly tenderness as he replied:

"Come, Charles, compose yourself. Take courage. You have nothing to thank me for. I am simply fulfilling my duty as a father. But, good heavens! What a state I find you in, my poor fellow!"

Charles was, in fact, greatly overcome by these words and this kindness for which he was so unprepared, and threw himself into Le Prieux' arms with another confused burst of gratitude. Reine's father was himself deep-

ly stirred, but still more deeply intent upon learning the whole truth as to the relations between the two young people. He drew Charles from the ante-room into the inner study, where the young barrister without briefs nourished his youthful reveries.

Le Prieux had been there but once before, but that one visit had sufficed to win the writer's sympathetic interest for the young man. For this modest room with its old-fashioned Provençal furniture of worm-eaten walnut, with the choice photographs on the walls representing the finest architecture and scenery of Nîmes, Arles and Alguemortes, with its bookcases filled with well-chosen, much-read volumes, with its outlook upon the old trees of the Luxembourg gardens, breathed an atmosphere of studious and romantic youth. It was redolent of the poetry of the native soil, held sacred amidst the whirl of Paris life; and seemed to symbolize the conflict which had gone on in the young man's mind between homesickness for his Provence and the allurements of Paris. The same characteristics which he now saw in the objects about him had already awakened in Hector's mind the idea that Charles might be the very husband he desired for Reine, and this impression added to the affectionate insistence with which he sought to bring out the whole secret of the young man's sentiments.

"No," he began, "I am not good and you must not thank me. I repeat that I am only doing my duty as a father. But you must do your duty also, and respond to this step on my part by absolute sincerity. Come, speak to me freely, openly! Tell me everything—"

"But what can I tell you," replied Charles, "which my mother's letter has not already told you and Madame Le Prieux? I understood, the moment I saw you enter, that you had come to repeat to me what I already knew from

my cousin, that our marriage is impossible. I ought to have understood it before, from your not sending for me on the receipt of the letter—and yet, Monsieur Le Prieux, I swear to you I would have done everything in my power for Reine's happiness. I would have devoted my life to her—I am a very small personage, I am well aware, but the little I am would have been hers without reserve. My mother, I am sure, has already told you that she and my father feel as I do."

If the revelation of Madame Le Prieux' duplicity, in regard to Madame Huguenin's letter had overwhelmed Reine who had been expecting this proposal, how it must have struck home to her father who was utterly unprepared for the news. In a lightning-flash the whole truth broke upon him! This explained the shade of anxiety in his wife's voice when she asked him: "Have you been sounded on this subject, too?" Moreover, the young man's tone admitted of no doubt, and Reine's father turned his eyes away lest his interlocutor should read the pain in them.

Yet he wished for further light, and accordingly went on plying him with side-questions such as one hazards who dares not fully express his thought: "You tell me that you have been warned by Reine of some sudden obstacle? She was aware, then, of your mother's proposal?"

"Oh, Monsieur Le Prieux," cried Charles, "I beg of you do not blame Reine! My cousin has nothing to reproach herself with—I give you my word of honor! I had never spoken to her of my feelings—never—until the other night, when, indeed, I ventured to ask her what she would answer if my mother addressed you as she has done. I know that this was wrong on my part—I ought to have spoken first to you and Madame Le Prieux. But it was only too natural, after all, that, loving her as I did, I could not endure the

doubt—that I should have tried to find out her feeling for me."

"She authorized you, then, to address us?" asked the father.

"I understood that she did not forbid it."

Le Prieux paused a moment in his interrogation, in which each word, while throwing a cruel light upon certain incidents of the past few days, deepened the shadow upon others. His daughter's attitude towards him as she was on her way to speak to her mother, which had been incomprehensible to him before, now became clear; she had evidently believed that her mother had sent for her in order to speak of Madame Huguenin's letter. On the other hand, the words exchanged between mother and daughter became still more enigmatical in view of this understanding between Reine and her cousin. How and why had she changed her mind so suddenly? Had she seen her cousin in the interval or had she written to him? Having just discovered such a total lack of candor on the part of his wife, Hector shuddered at the idea of his daughter's giving a secret rendezvous or carrying on a clandestine correspondence.

The thought was so intolerable to him that he seized the young man by the arm as he exclaimed: "Charles, you are not confessing the whole truth to me. It is ill-done on your part. No, you have not confessed all," he insisted. "Do not interrupt me! You acknowledge that you and Reine were agreed about your mother's writing to us. Reine must therefore have consented to marry you, you admit it. You admit also that she told you the marriage had become impossible? She must have spoken or written to you then. You have seen her—when and how? And yet you wish me to believe that neither you nor she have anything to reproach yourselves with?"

"I will tell you all," answered the

young man, with a visible effort; "both for her sake and for mine. You, at least shall not suspect her," he went on, with a voice that quivered with remorse for his own injustice: "Yes, I met my cousin this morning at eleven, on the Tuilleries Terrace; there was a third person with us. I give you my word of honor that it is the first rendezvous we have ever had. Here is a proof of the truth of what I am telling you," and he drew from his pocket the little blue despatch from Reine, and held it out to Le Prieux. "My cousin wished to speak to me—out of pity, as I now understand. She did not wish me to learn brutally from another the destruction of my dearest hopes. All that we said to each other during that interview I can repeat to you—if only to prevent your being unjust toward her too," and he began to pour forth a recital of the painful interview of the morning—first the impression Reine's note had made upon him, then her arrival, how he had guessed from her pallor that something serious had occurred; then her words, and his to her, his burst of jealous rage and all. The father listened to the recital of these simple but poignant experiences, with his daughter's note in his hand. He looked again at the writing in which he could read her agitation, and a passionate rush of pity came over him for his gentle and sensitive child. He understood now the fever which shone in her eyes when she returned from this cruel interview, and the decision in her voice as she refused the respite her parents offered her; and he understood also the conduct of Fanny Perrin—evidently the third person mentioned by Charles—the innocent witness of this innocent rendezvous. But one point remained darker than ever: What had been Reine's motive for consenting to the marriage with Faucherot, when her choice was left free?

Her father knew, alas! only too well

where to look for the answer to this riddle, but honor obliged him to seek it alone. In this inquiry into what he suspected to be his wife's unscrupulous tactics, he must not seek the aid of this young man, whom he regarded henceforth as their future son-in-law. He had risen as the latter ended his confession, and was now pacing up and down the room in a silence which the other did not venture to break. Although Charles found Reine's attitude still more inexplicable in the light of her father's favoring his suit, yet he understood, with his natural tact, sharpened by love, that he was bound to respect this silence. His heart leaped in his breast as Le Prieux paused suddenly before him, and having looked long into his eyes said, at last, with the solemnity in his voice and gesture of one who has taken a great step, and who sets before another his irrevocable decision:

"You have answered me like an honorable man, Charles, loyally and courageously, and I will speak to you in the same way. You love Reine and you deserve to win her. She loves you and it depends only upon her to become your wife—only upon her, you understand. There has been a question of another marriage these last days, it is true—but I find it hard to imagine that this can be the obstacle to which she alludes. There must be some misunderstanding which I have not yet unravelled. But I will unravel it. I say once more that she shall be your wife on the day when she wishes it. From this hour you have my consent. I believed your word of honor just now and that gives me the right to require you to pledge it again. I ask you to promise me that you will not attempt to see her until I authorize you to do so. There is a great deal of wisdom, as you are now finding out, in our old French custom which requires that children's marriages should be ar-

ranged only through the instrumentality of their parents. If you had obeyed this rule you would have come to me in the first place, before speaking to her, and thus have spared her much needless suffering; and you would not have offended her, perhaps irrevocably. Her feelings are very intense, and your doubt of her must have wounded her deeply. Leave it to me to probe the wound—and once more, since there is a misunderstanding to clear away, leave it to me to clear it! Have I your word that you will do nothing further without my concurrence?"

"You have it," rejoined the young man, seizing both *Le Prieux*' hands in his.

"And that you will obey me in everything?"

"And that I will obey you in every-

thing. You have been my friend always, *Monsieur Le Prieux*—but how much more now!"

"Now," interrupted the father, who was visibly afraid of giving way to his own feelings, "you will begin to keep your word by sitting down at that table and writing *Reine* a letter, in which you ask her pardon for the words you spoke to her this morning. That surprises you, eh? But I have my plan—I have my plan. Come now," he added with the tender irony of an older man for the love affairs of his juniors, which he smiles at while secretly enjoying them. "Must I dictate this letter to you? Write and say anything you please. I will deliver it to *Reine* without reading it. Does that satisfy you?"

(To be concluded.)

THE ENGLISH CAPTAIN.

(Freely rendered from the Norwegian.)

Over the *Kattegat* flood, from the rock-bound precipice straining,
Straining with heart and eye, the Swedes looked down on the English—
Looked on the English fleet, which lay in wait on the waters,
Purpose and aim unknown—to Swede and Briton a riddle.
Halted the fleet outside, where over the Sound looms *Kronberg*;
And as on wings of the storm, swept Doubt, not Fear, over Denmark.

Lying with lashed-up sail, the hulls all crowded and hollow,
While with satisfied smile was rocking the deep dark ocean,
Eager, alert, and bold, the bluejackets waited for orders—
Ever in every land the same wherever you find them,
Keen on the laurel's quest, for the rich red roses of Honor.
There from the Admiral's ship the big flag bravely was flying.
There, at the dawn of day, grew sudden the haste and commotion:
All awaited the hour when the sealed-up word should be given.

The English Captain.

All looked straight at the seal, when there the Admiral broke it.

"Sail out yonder, where lies the Danish fleet at her anchors
Safe in the nest, whence you shall draw her to open battle
Out of the harbor's clasp. First offer her peace; then fight her."

Loud rang out on the deck the wild glad cheers of the sailors.
Faces grew bright with joy, and awake for glory and plunder;
Every man's hope ran high—save his, his only, amongst them.
Calmly one captain—young—stood back in the common rap-
ture;

Calmly he craved his leave to speak to the great commander.
"Admiral," so he spake, "I was but a lad when I started—
Started at Aboukir, on board a warship of Nelson.
So that at fifteen years Fame found me a practised wooer.
Many a mad Korsar, far off in the tropical Indies,
After a hand-to-hand fight, have I taken and hanged to the
yard-arm;

Wounded at Trafalgar, my wound is hidden by medals.
War to the knife, fierce France! and proudly shall His-
tory note it;

Death to the pirate-foe! and death did I deal to him gladly;
God and King George! I cried, when I fired on Napoleon's
squadrons;

Ever for them fight I, but for wrong and robbery, never;
False rings your statecraft's note, and falsely misleads your
sailors—

Steer for the passes of right, and the stars of God are your
compass;

But—I will never break the oath that I swore to England,
I will keep it to death—till death will I do my duty;
There is no danger here to your fleet, but all to my honor:
Sail as you will—I go in quest of other adventure,
For in the Scripture of old my unsealed orders are written—
More than Imperial Rome, the Lord thy God is the master."
Then he sprang from the deck, and the waves rolled sullenly
o'er him.

Dreamer or fanatic! fool or madman! whatever you call him,
Down to the bottom he swam; and there in the mystical re-
gions,

There between beasts with fins, and plants that thrive with-
out daylight,

Into the dank sea-weeds he plunged, and was lost, and buried.

On sailed the English fleet to the city of Copenhagen;
Far from the place he lay, the place where the fight was
foughten,

He—a water-cold corpse, and hid by the cold steel water;
There, on a starlight night, some Swedish fishermen found
him.

Bore him in boat to the shore, and tossed for his epaulettes,
starlit.

North there of Helsingborg, by the famous lands of La
Gadles,

Tearless and sorrowless he, without landmark or watermark,
rested:

O'er a neglected grave the seagulls hover about him,
Treading the air around, the thin, keen air of the northland:
Yet sometimes from the spot does a ghost peer out in the
shadow,

Gaze on the sea and fade away in the ghostlier moonlight,
Straining and straining still, for the coast of the great coal
island.

The Spectator.

Herman Merivale.

COLONIAL SERVANTS.

BY LADY BROOME.

My very first experience of the eccentricities of colonial servants dates more than half a century ago, and the scene was laid in Jamaica, where my father then held the office of "Island Secretary" and Sir Charles, afterwards Lord Metcalfe, was Governor. It was Christmas day, and I had been promised as a great treat that my little sister and I should sit up to late dinner. But the morning began with an alarm, for just at breakfast time an orderly from one of the West Indian regiments then stationed in Spanish Town, had brought a letter to my father which had been sent upstairs to him. I was curled up in a deep window-seat in the shady breakfast-room, enjoying a brand-new story-book and the first puffs of the daily sea-breeze, when I heard a guttural voice close to my ear whispering, "Kiss, missy, kiss." There stood what seemed a real black giant compared with my childish stature, clad in gorgeous Turkish-looking uniform with a big white turban and a most benignant expression of face,

holding his hand out palm upwards. I gazed at this apparition—for I had only just arrived in Jamaica—with paralyzed terror, while the smiling ogre came a step nearer and repeated his formula in still more persuasive tones. Just at this moment, however, my father appeared and said, "Oh yes, all right; he wants you to give him a Christmas-box. Here is something for him." It required even then a certain amount of faith as well as courage to put the silver dollar into the outstretched palm, but the man's joy and gratitude showed the interpretation had been quite right. I did not dare to say what my alarm had conjured up as the meaning of his request, for fear of being laughed at.

As well as I remember, at that Christmas dinner party—and it was a large one—the food was distinctly eccentric, edibles usually boiled appearing as roasts and *vice versa*. The service also was of a jerky and spasmodic character, and the authorities wore an air of anxiety, which, however, only added to

the deep interest I took in the situation. But things came to a climax when the plum-pudding, which was to have been the great feature of the entertainment, did not appear at its proper time and place, and a tragic whisper from the butler suggested complications in the background. My father said laughingly, "I am sorry to say the cook is drunk and will not part with the plum-pudding," so we went on with the dinner without it. But just as the dessert was being put on the table there was a sound as of ineffectual scrimmaging outside, and the cook—a huge man clad in spotless white—rushed in bearing triumphantly a large dish, which he banged down in front of my father saying, "Dere, my good massa, dere your pudding," and immediately flung himself into the butler's arms with a burst of weeping. I shall always see that pudding as long as I live. It was about the size of an orange and as black as a coal. Every attempt to cut it resulted in its bounding off the dish, for it was as hard as a stone. Though not exactly an object of mirth in itself, it certainly was "a cause that mirth was in others," and so achieved a success which might have been denied to a better pudding.

Many years passed before I again came across black servants, and the next time was in India. I was not there long enough, nor did I lead a sufficiently settled life, to be able to judge of the Indian servant of that day. Half my stay in Bengal was spent under canvas, and certainly the way in which the servants arranged for one's comfort under those conditions was marvellous. The camp was a very large one, for we were making a sort of military promenade from Lucknow up to Lahore—my husband being the Commanding Officer of Royal Artillery in Bengal—but I only went as far as the foot of the Hills and then up to Simla. It was amazing the way in which nothing was ever forgotten or left behind during four

months' continuous camp life. All my possessions had to be divided, and, where necessary, duplicated, for what one used on Monday would not be get-at-able until Wednesday, and so on all through the week. No matter how interesting my book was, I could not go on with it for thirty-six hours—i. e., from, say, Monday night till breakfast time on Wednesday morning. I could have a new volume for Tuesday, but the interest of that had also to remain in abeyance, until Thursday. Still, I would find the book precisely where I laid it down, and if I had put a mark, even a flower, it would be found exactly in the right place.

I always wondered when and how the servants rested, for they seemed to me to be packing and starting all night long, and yet when the new camping-ground was reached the head servants would always be there in snowy garments, as fresh and trim as if they came out of a box. There were two sets of under-servants, but the head ones never seemed to be off duty.

We started with the first streak of daylight, and there was no choice about the matter, for if you did not get up when the first bugle blew your plight would be a sorry one when the canvas walls of the large double tent fell flat at the sound of the second bugle half an hour later. The roof of the tent was left a few moments longer, so one had time for hot fragrant coffee and bread and butter before starting either on horse or elephant back. I generally rode on a pad on the *hathi's* back for the first few miles while it was still dark, and mounted my little Arab some six or eight miles further on. The marches were as near twenty-five miles daily as could be arranged to suit the Commander-in-Chief's convenience as to inspections, etc.

Everything was fresh and amusing, but I think I most delighted in seeing the modes of progression adopted by

the various cooks. The head cook generally requisitioned a sort of gig, in which he sat in state and dignity, with many bundles heaped around him. Part of his cavalcade consisted of two or three very small ponies laden with panniers, on top of which invariably stood a chicken or two, apparently without any fastenings, who balanced themselves in a precarious manner according to the pony's gait. No one seemed to walk except those who led the animals, and as the camp numbered some 5,000 soldiers, and quite as many camp followers, the supply train appeared endless.

Just as we neared the foot of the Himalayan range, where the camp was to divide, some of us going up to Simla, leaving a greatly lessened force to proceed to Lahore, smallpox appeared among our servants. I wonder it did not spread much more, but it was vigorously dealt with at the outset. I had as narrow an escape as any one, for one morning, while I was drinking my early coffee and standing quite ready to start on our daily march, one of the servants, a very clever, useful Madras "boy" whom I had missed from his duties for several days, suddenly appeared and cast himself at my feet, clutching my riding-habit and begging for some tea. He was quite unrecognizable, so swollen and disfigured was his poor face, and I had no idea what was the matter with him. He was delirious and apparently half-mad with thirst. The doctor had to be fetched to induce him to let me go, and as more than once the poor lad had seized my hands and kissed them in gratitude for the tea I at once gave him I suppose I really ran some risks, for it turned out to be a very bad case of confluent smallpox. However, all the same he had to be carried along with us in a dhooly until we reached a station where he could be put into a hospital.

But certainly the strangest phase of

colonial domestics within my experience were the New Zealand maid-servants of some thirty-five years ago. Perhaps by this time they are "home-made," and consequently less eccentric; but in my day they were all immigrants, and seemed drawn almost entirely from the ranks of factory girls. They were respectable girls apparently, but with very free and easy manners. However, that did not matter. What seriously inconvenienced me at the far up-country station where my husband and I had made ourselves a very pretty and comfortable home, was the absolute and profound ignorance of these damsels. They took any sort of place which they fancied, at enormous wages, and when they had at great cost and trouble been fetched up to their new home I invariably discovered that the cook, who demanded and received the wages of a *chef*, knew nothing whatever of any sort of cooking, and the housemaid had never seen a broom. They did not know how to thread a needle or wash a pocket-handkerchief, and, as I thought, must have been waited on all their lives. Indeed, one of my great difficulties was to get them away from the rapt admiration with which they regarded the most ordinary helps to labor. One day I heard peals of laughter from the wash-house, and found the fun consisted in the magical way in which the little cottage-mangle smoothed the aprons of the last couple of damsels. So I—who was extremely ignorant myself, and had no idea how the very beginnings of things should be taught—had to impart my slender store of knowledge as best I could. The little establishment would have collapsed entirely had it not been for my Scotch shepherd's wife, a dear woman with the manners of a lady and the knowledge of a thorough practical housewife. What broke our hearts was that we had to begin this elementary course of instruction over and over

again as my damsels could not endure the monotony of their country life longer than three or four months, in spite of the many suitors who came a-wooing with strictly honorable intentions. But the young ladies had no idea of giving up their liberty, and turned a deaf ear to all matrimonial suggestions, even when one athletic suitor put another into the water-barrel to get him out of the way, and urged that this step must be taken as a proof of his devotion.

After the New Zealand experiences came a period of English life, and I felt much more experienced in domestic matters by the time my wandering star led me forth once more and landed me in Natal. In spite, however, of this experience, I fell into the mistake of taking out three English servants, whom I had to get rid of as soon as possible after my arrival. They had all been with me some time in England, and I thought I knew them perfectly; but the voyage evidently "wrought a sea change" on them, for they were quite different people by the time Durban was reached. Two developed tempers for which the little Maritzburg house was much too small, and when it came to carving-knives hurling through the air I felt it was more than my nerves could stand. The third only broke out in folly, and showed an amount of personal vanity which seemed to border almost on insanity. However, I gradually replaced them with Zulu servants, in whom I was really very fortunate. They learned so easily, and were so good-tempered and docile, their only serious fault being the ineradicable tendency to return for a while—after a very few "moons" of service—to their kraals. At first I thought it was family affection which impelled this constant homing, but it was really the desire to get back to the savage life, with its gorges of half-raw meat and native beer, and its freedom from clothes. It is true I had an occasional very bad

quarter of an hour with some of my experiments, as, for instance, when I found an embryo valet blacking his master's socks as well as his boots, or detected the nurse-boy who was trusted to wheel the perambulator about the garden stuffing a half-fledged little bird into the baby's mouth, assuring me it was a diet calculated to make "the little chieftain brave and strong."

I think, however, quite the most curious instance of the thinness of surface civilization among these people came to me in the case of a young Zulu girl who had been early left an orphan and had been carefully trained in a clergyman's family. She was about sixteen years old when she came as my nursemaid, and was very plump and comely, with a beaming countenance and the sweetest voice and prettiest manners possible. She had a great love of music, and performed harmoniously enough on an accordion as well as on several queer little pipes and reeds. She could speak, read and write Dutch perfectly as well as Zulu, and was nearly as proficient in English. She carried a little Bible always in her pocket, and often tried my gravity by dropping on one knee by my side whenever she caught me sitting down and alone, and beginning to read aloud from it. It was quite a new possession, and she had not got beyond the opening chapters of Genesis, and delighted in the story of "Adam and Eva," as she called our first parents. She proved an excellent nurse and thoroughly trustworthy; the children were devoted to her, especially the baby, who learned to speak Zulu before English and to throw a reed assegai as soon as he could stand firmly on his little fat legs. I brought her to England after she had been about a year with me, and she adapted herself marvellously and unhesitatingly to the conditions of a civilization far beyond what she had ever dreamed of. After she had got over her surprise at the ship know-

ing its way across the ocean, she proved a capital sailor. She took to London life and London ways as if she had never known anything else. The only serious mistake she made was once in yielding to the blandishments of a persuasive Italian image-man and promising to buy his whole tray of statues. I found the hall filled with these works of art, and Mallia tendering, with sweetest smiles, a few pence in exchange for them. It was a disagreeable job to have to persuade the man to depart in peace with all his images, even with a little money to console him. A friend of mine chanced to be returning to Natal, and proposed that I should spare my Zulu nurse to her. Her husband's magistracy being close to where Mallia's tribe dwelt, it seemed a good opportunity for Mallia to return to her own country; so of course I let her go, begging my friend to tell me how the girl got on. The parting from the little boys was a heart-breaking scene, nor was Mallia at all comforted by the fine clothes all my friends insisted on giving her. Not even a huge Gainsborough hat garnished with giant poppies could console her for leaving her "little chieftain;" but it was at all events something to send her off so comfortably provided for, and with two large boxes of good clothes.

In the course of a few months I received a letter from my friend, who was then settled in her up-country home, but her story of Mallia's doings seemed well-nigh incredible, though perfectly true.

All had gone well on the voyage and so long as they remained at Durban and Maritzburg; but as soon as the distant settlement was reached, Mallia's kinsmen came around her and began to claim some share in her prosperity. Free fights were of constant occurrence, and in one of them Mallia, using the skull of an ox as a weapon, broke

her sister's leg. Soon after that she returned to the savage life she had not known since her infancy, and took to it with delight. I don't know what became of her clothes, but she had presented herself before my friend clad in an old sack and with necklaces of wild animals' teeth, and proudly announced she had just been married "with cows"—thus showing how completely her Christianity had fallen away from her, and she had practically returned on the first opportunity, to the depth of that savagery from which she had been taken before she could even remember it. I soon lost all trace of her, but Mallia's story has always remained in my mind as an amazing instance of the strength of race-instinct.

My next colonial home was in Mauritius, and certainly the servants of that day—twenty years ago, alas!—were the best I had ever come across out of England. I am told that this is no longer the case, and that that type of domestic has been improved and educated into half-starved little clerks. The cooks were excellent, so were the butlers. Of course, they had all preserved the Indian custom of "dustoor" (I am not at all sure of the spelling) or perquisite. In fact, a sort of little duty was levied on every article of consumption in a household.

I never shall forget the agony of mind of one of my butlers at having handed me a wrong statement of the previous day's "bazar." I had really not yet looked at it, but he implored me with such dreadful agitation to let him have it back again to "correct," that I read it aloud before him, to his utter confusion and abasement. The vendor had first put down the price paid him for each article, and then the "dustoor" to be added; needless to say I was to pay the difference, and the tax had been amply allowed for in the price charged. As "Gyp" would say, Tableau!

Curiously enough it was the dhoby or washerman class which gave the most or rather the only trouble. They—i. e., the washerman and his numerous wives—fought so dreadfully. Once I received a petition requesting me in most pompous language to give the youngest or "last-joined" wife a good talking to, for in spite of all corrections—that is, beatings—she declined entirely to iron her share of the clothes, and had the effrontery to say she had not married an ugly old man to have to work hard. The dhoby, on his side, declared he had only incurred the extra expense and bother of a fourth and much younger wife in order that the "Grande Madame's" white gowns might be beautifully ironed fresh every day.

I handed the letter—almost undeclipherable on account of ornate penmanship and flourishes—to the A.D.C. who was good enough to help me with my domestic affairs, and he must have arranged it satisfactorily, for when he left us hurriedly to rejoin his regiment, which had been ordered on active service, he received a joint letter of adieu from all the dhobies, wishing him every sort of good fortune in the campaign, and expressing a hope that he might soon return with the "croix de la reine Victoria flottant de sa casaque." Rather a confusion of ideas, but doubtless well meant.

In spite, however, of the general excellence of Mauritius servants, my very dignified butler at Réduit gave me the most trying experience of my party-giving career. Once upon a time I had an archery meeting at Réduit, and a dance afterwards for the young people. This program, combining, as it did, afternoon and evening amusements—required a certain amount of organization as to food. The shooting was to go on as long as light lasted, and it was thought better to have the usual re-

freshments in the tents during that time, and then an early and very substantial supper indoors so soon after the dancing began as the guests liked to have it.

There used in those days to be an excellent restaurant in Port Louis which furnished all the ball suppers. The cost was high, but all trouble was saved, and the food provided left nothing to be desired. The manager of the "Flore Mauricienne" never made a mistake and only needed to be told how many guests to provide for; everything was then sure to be beautifully arranged. So I had no anxieties on the score of ample supplies of every obtainable dainty being forthcoming. Great, therefore, was my surprise, when, after the first batch of guests had been in to the supper-room, I was informed in a tragic whisper that everything looked very nice in there but that there was no second supply of food to replenish the tables. This seemed impossible, and I sent for the butler and demanded to know what had become of the supper. "Monsieur Jorge," smiled blandly and, waving his hands in despair, ejaculated, "Rien, rien, Madame," repeatedly. So, although I had not intended to go in to supper myself just then, I hastened to the scene. There were the lovely tables as usual, a mass of flowers and silver, but with empty dishes. I felt as if it must be a bad dream from which I should presently awake, but that did not make it less terrible at the moment. Of course the A.D.C.s were active and energetic, but they could not perform miracles and produce a supper which they had themselves ordered and thought had arrived, but which seemed to have vanished into thin air. Tins of biscuits were found and sandwiches were hastily cut, and every one was most kind and good-natured and full of sympathy for me.

If "Monsieur Jorge" and his myrmidons had appeared in the least tipsy,

the situation would have been less perplexing, but except a profound and impenetrable gravity of demeanor every servant seemed quite right. My guests danced merrily away, and hunger had no effect on their gay humor, but the staff and I (who had had no supper) were plunged in melancholy.

The moment our telegraph clerk came on duty next morning a message was sent to Port Louis (eight miles off) asking the manager of the "Flore" what had become of his supper, and by the time I came down to breakfast that worthy had appeared on the scene, and more versed in the ways of Mauritian servants than any of us were, had elicited from Monsieur Jorge that he remembered putting the numerous boxes of supper away carefully, but where, he could not imagine. The night before he had insisted that he had placed all the supper there was on the tables. So a search was instituted, and very soon the melancholy remains of the supper were discovered hidden away in an unused room. All the packing ice had, of course, melted, and jellies, etc., were reduced to liquid. There was about fifty pounds' worth of food quite spoiled and useless, most of it only fit to be thrown away. The manager's wrath really exceeded mine, and he stipulated that not one of the crowd of servants should have a crumb of the remains of that supper, which I heard afterwards had been given to the garden coolies. As a matter of fact, I believe Monsieur Jorge was somewhat tipsy, and it took the form of complete loss of memory. But it was a dreadful experience.

From the *belle île de Maurice* we went to Western Australia, where we arrived in the middle of winter, and the contrast seemed great in every way, especially in the domestic arrangements, for servants were few and far between and of a very elementary stamp of knowledge. I tried to remedy that defect by importing maid-servants, but

succeeded only in acquiring some very strange specimens. In those days Western Australia was such an unknown and distant land that the friends at home who kindly tried to help me found great difficulty in inducing any good servant to venture so far, and although the wages offered must have seemed enormous, the good class I wanted could not at first be induced to leave England. Later, things improved considerably and we got very good servants, but the first importations were very disheartening. I used to be so amazed at their love of finery. To see one's housemaid at church absolutely covered with sham diamonds, large rings outside her gloves, huge solitaire earrings, and at least a dozen brooches stuck about her, was, to say the least of it, startling; so was the apparition of my head cook, whom I sent for hurriedly once, after dinner, and who appeared in an evening dress of black net and silver. I also recognized the kitchen-maid at a concert in a magnificent pale green satin evening dress, which, taken in conjunction with her scarlet hair was rather conspicuous. Of one gentle and timid little housemaid, who did not dazzle me with her toilettes, I inquired what she found most strange and unexpected in her new home—which, by the way, she professed to like very much—

"The lemons, my lady, if you please."

"Lemons?" I said, "why?"

"Well, it's their growin' on trees as is so puzzlin'-like, if you please."

"Where else did you expect them to grow?" I inquired.

"I thought they belonged to the nets. I always seen them in nets in shops, you know; and lemons looks strange without nets."

My next and last experience of colonial servants was in Trinidad. By this time I had gained so much and such varied experience that there was no excuse for things not working

smoothly, and as I was fortunate in possessing an excellent head-servant who acted as house-steward I had practically no trouble at all beyond a little anxiety at any time of extra pressure about the head cook, who had not only heart disease, but when drunk flew into violent rages. Our doctor had warned the house-steward that this man—who was a half-caste Portuguese from Goa—might drop dead at any moment if he gave way to temper and drink combined. So it was always an anxious time when balls and banquets and luncheons followed each other in quick succession. On these occasions, besides his two permanent assistants, G. was allowed a free hand as to engaging outside help. But he seemed to take that opportunity to bring in his bitterest foes, to judge by the incessant quarrels, all of long standing, which poor Mr. V. (the house-steward) had to arrange. I only did the complimenting, and after each ball, supper or big dinner, sent for the cook and paid him extravagant compliments on his efforts. That was the only way to keep him going, and things went well on the surface; but there were tragic moments to be lived through when the said cook had refreshed himself a little too often, and about midday would declare he had no idea what all these people were doing in his kitchens, and, arming himself with a rolling-pin, would drive them forth with much obloquy. I chanced to be looking out of my dressing-room window one day when he started a raid on the *corps d'armée* of black girls who were busily picking turkeys and fowls for that night's ball supper. I never saw anything so absurd as the way the girls fled into the neighboring nutmeg-grove, each clasping her half-picked fowls and scattering the feathers out of her apron as she ran with many "hi hi's."

I really began to think it would be necessary to summon the police sentries

to protect them, for G. was flinging all sorts of fruit and vegetables at them, and had quite got their range. However as Mr. V. emerged from his office and began to inquire of the cook if he was anxious to die on the spot, I only looked on. At first there was nothing but rage and fury on the cook's part, to which Mr. V. opposed an imperturbable calm and the emphatic repetition of the doctor's warning. Then came a burst of weeping, caused, G. declared, by his sense of the wickedness of the human race in general, and "dem girls" in particular. After that a deep peace seemed to suddenly descend on the scene, and the cook returned to his large and airy kitchens, still weeping bitterly. Mr. V. vanished, the picking girls re-appeared one by one, and, cautiously looking round to see if it was safe to do so, took up their former positions under shady trees. Presently I saw other forms stealing back into the kitchens, from which they too had been forcibly ejected, and then I heard the cook's voice start one of Moody and Sankey's hymns, with apparently fifty verses and a rousing chorus. After that I had no misgivings as to the success of the supper.

We succeeded, as it were, to most of our servants, for they had nearly all been at Government House for some years, and at all events knew their duties. I met one functionary, whose face I did not seem to know, on the staircase one day, and inquired who he was. "Me second butlare, please," was the answer. The first "butlare" was an intensely respectable middle-aged man, of apparently deeply religious convictions, and I always saw him at church every Sunday, and he was a regular and most devout communicant. Judge, then, of my surprise and dismay, when, poor Jacob having died rather suddenly of heart disease, I was assured that four separate and distinct

Mrs. Jacobs had appeared, each clad in deepest widow's weeds, and each armed with orthodox "lines" to claim the small arrears of his monthly pay. But

The Cornhill Magazine.

I am afraid that similar inconsistencies between theory and practice are by no means uncommon in those "Summer Isles of Eden."

LORD ROSEBERY'S NAPOLEON.

There was a grand simplicity in Napoleon's temper, which made his worst misdeeds heroic; and even in disgrace he did not lose the faculty of terror. Wherefore he had so tightly laid hold of the general imagination, that the slenderest record of his words and deeds is readable and read. At St. Helena he was sometimes peevish, because he did not suffer restraint gladly; yet Lord Rosebery's "Napoleon: The Last Phase" (London: Humphreys) adds to our interest without decreasing our admiration. It may be said at once that the book is temperate and efficient; it is in no respect a great work; it does not rise to eloquence nor convince its readers by happily found phrases. But it is a good specimen of the book-maker's art (we hope Lord Rosebery, the sport, will not mistake our meaning), and it is packed with entertainment from beginning to end. The author has studied the mass of literature which concerns his subject with laudable energy; he has done his best to sift truth from falsehood (and none knows better than he the atmosphere of deceit in which Napoleon chose to live); and if he be too lenient to the hero, too harsh to the man whose ill-fortune it was to guard him, the leniency may be attributed partly to political bias, partly to a natural love of the grandiose and picturesque.

Now it is one of the puzzles of politics that Napoleon, the greatest tyrant of modern times, should have been and

should remain the idol of the Radical party. The man who hated Democracy because he feared the people, who would permit no freedom of thought or speech within his dominions, who shot a burgomaster and flogged an actor, who wisely suppressed newspapers and hampered the theatre, was, in his own time, beloved by the Liberals of England, and is to-day stoutly championed by Lord Rosebery. The attitude of our ancient Radicals is quite intelligible. Napoleon was sworn to destroy England; Liverpool and Castlereagh were sworn, with Wellington's aid, to protect the British Isles. And since nothing that Liverpool and Castlereagh could do was right, it was evident to thousands of Englishmen that Boney was an angel of light, whose advent in London might have seemed a national triumph. To-day the reasoning is not so clear, though it is less personal; yet Lord Rosebery, in doing rather more than justice to Napoleon, is a little less than just to the British Government.

In the first place he confuses the argument. Napoleon was so great, he suggests, that he should have been treated with every kindness. Concerning the grandeur of Napoleon, there is and can be no discussion; but it is the very grandeur of Napoleon which best justifies the severity of Lord Bathurst and Sir Hudson Lowe. Put all hypocrisy on one side, forget for the moment the splendid element of romance, and you cannot wonder that the

English Government was resolute to keep their prisoner safely under lock and key. For many years the Tories of England had persisted in a struggle upon which depended the very existence of their fatherland. They had vanquished their enemy at a vast expense of blood and treasure, and there the task should have ended. They did not seek the capture of Napoleon; he came to them uninvited, because he knew that on the Bellerophon lay his only hope of safety. Lord Liverpool sorrowfully accepted the charge. "If the King of France does not feel himself strong enough to treat him as a rebel," wrote Liverpool to Castlereagh, "we are ready to take upon ourselves the custody of his person." We undertook the custody of his person, and ever since we have been assailed by the very men whose fathers would have incontinently put him to death.

There is, therefore, an obvious hypocrisy in the common view of our conduct and responsibility. We were acting, let it be remembered, not merely for ourselves—we were the watch-dogs of Europe; and most men shared the belief of Napoleon himself that he would return in triumph from St. Helena, as he had returned from Elba. In Europe many friends were left him, besides our own Jacobins. He could once more have gained the control of vast wealth and the superiority of his temperament was conspicuous as ever. What, then, could England have done? She could not shoot him—that would have been the choice of France. She could not lock him up in jail—that might have been the policy of Russia or Austria. She did the best that was possible under the circumstances—she sent him to St. Helena, with as much liberty as ever a prisoner enjoyed, with a carriage and six horses, and with an income of £12,000 a year. For her pains she has endured eighty years of obloquy.

Not that we would give an unqualified approval of our countrymen's conduct. Rather we would suggest an apology, which has been too often withheld. The Tory Ministry of 1815 was rather dogged than intelligent, and they made their first mistake when they appointed Sir Hudson Lowe as governor of St. Helena; for Sir Hudson Lowe, admirable soldier and honest man as he was, was neither tactful nor diplomatic, and he was asked to pit his tact against the tact of the greatest diplomatist in the world. On the other hand, we do not share the universal contempt of Sir Hudson Lowe, which none can feel who has attentively studied Mr. Seaton's valiant defence. But it is clear that Lowe was not the man for the place. He was at once too firm and too yielding. He strained at gnats and swallowed camels. He conscientiously strove both to please Napoleon and to win the approval of Lord Bathurst. He tolerated the intriguers who made up the Imperial Court; and it is small wonder that, irritable himself, he increased the irritation of the others. For he faced no ordinary task, no ordinary antagonist. No sooner did Napoleon land at St. Helena than he devised "*la politique de Longwood*"—a plan cunningly designed to wear down the strongest forbearance. He would neither accept favors nor endure slights. He stood upon his dignity, and resented policy. Whatever method of conciliation Sir Hudson might have adopted was foredoomed to failure, because Napoleon, with his eye upon Europe, was determined to win sympathy beyond the limits of St. Helena, because he was, in effect, playing to the gallery. Of course he acted well within his right, and none can say that he did not play the game according to the rules. Lowe was his jailer, and it was his business to make him feel the discomfort of the position. On the other hand Lowe also did no more than he should.

He, too, was playing a game far more difficult than Napoleon's, since he faced an adversary of genius, and essayed a game that he was predestined to lose. To either side, therefore, we should, at this distance of time, yield our measure of sympathy. And we believe that Napoleon, at any rate, was too good a sportsman not to justify Sir Hudson's conduct. When the Emperor died the game was played out, and the Emperor had won nearly every trick. Nor was he the man to whine, save in public, at his adversary's method of play; and his last act was to urge his friends to make peace with the governor.

A confusion of argument, then, has prevented Lord Rosebery from doing justice to his countrymen—has revived in his mind something of the old Jacobin heresy. But, if we except this blindness of hero-worship, we shall find in Lord Rosebery's book much that is interesting and valuable. Above all, he characterizes the strange, paltry world of Longwood with much lucidity. Gourgaud, Las Cases, Bertrand—he sums them all up, and we agree with him that the ingenious Boswell, that was Gourgaud, is both trustworthy and entertaining. And after all, when discussion is at an end, when we are tired of assailing or defending Sir Hudson Lowe, there remains in the literature of St. Helena a vast mass of admirable talk. Some may prefer the Napoleon of the suppressed letters, the Emperor whose pen was as a cutting sword, the hero who would have flung the cardinals into cold baths, and who rated all the kings of his own making, as an angry master rates his schoolboys. In truth, no man ever wielded the pen of sovereignty with a finer decision. But, highly as we admire these finished exercises of dominant vituperation, we are not sure that we do not prefer the Napoleon of St. Helena. The style is no longer the style of action. A quiet spirit of familiar reminiscence—silences

the voice of command. The reflection of the gossip replaces the authority of the monarch. In the pages of Gourgaud and others, faithfully reproduced by Lord Rosebery, we seem to look upon Napoleon seated at his hearth with his dressing-gown around him. Even his readers are admitted to an intimacy which the Emperor in his might admitted to no man, and, as we should expect, the Emperor says nothing that detracts from our respect. The intelligence is as vivid as ever, only it is exercised upon fresh topics. The pride is as lofty as of old, but it is a pride in matters more trivial than a throne. "I made Ossian the fashion," he boasts, with perfect truth. "The income-tax is a good tax," he says on another occasion, "for every one grumbles at it, which shows that every one pays it." Rare among men by his triumph, Napoleon is also rare among men by an appreciation of his own career. He is one of the few who have been conscious of their own drama. Taking up a year-book of his reign one day, "It was a fine empire," he said; "I ruled eighty-three millions of human beings—more than half the population of Europe." And again he murmurs, "After all, what a romance my life has been!" It had, indeed; but most, even of the mighty, have taken their life for granted. At St. Helena, however, he thought of the future as much as of the past. Now and again he discusses his generals, or declares in an admirable epigram that "Talleyrand is sure to die in his bed." But theology had a constant interest for him, and he never tired of reading the Bible to his companions. Moses he found an "able man," and once he proposed to write his campaigns. In matters of controversy he was by no means orthodox. He objected to Christianity he said, because it is not sufficiently ancient; and then consequently declared himself a Mohammedan. Another day he is a stern ma-

terialist. "Say what you like," he argues with a foretaste of Darwinism, "everything is matter, more or less organized. When out hunting I had the deer cut open, and saw that their interior was the same as that of a man. A man is only a more perfect being than a dog or a tree, and living better. The plant is the first link in a chain of which man is the last. I know that this is all contrary to religion, but it is my opinion that we are all matter." It is contrary to religion; but we should not expect orthodoxy from the man who kidnapped a pope, and who made the church an instrument of policy. Yet he is not always dogmatic; and another day he confesses that "there is so much that one does not know, that one cannot explain." Scepticism, indeed, is his constant attitude, and no discussion with Gourgaud or Bertrand can shift him from it.

His judgment of the English is generally favorable. He holds us good soldiers and bad diplomatists. Above all, he praises our loyalty. "Had I been in 1815," he says with justice, "the choice of the English as I was of the French, I might have lost the battle of Waterloo without losing a vote in the Legislature or a soldier from my ranks. I should have won the game." That is not the opinion of a man tortured into

Blackwood's Magazine.

hatred and revolt by unspeakable meanness. But the strangest trait of all is the frankness wherewith he discusses his family and his wives. He thinks ill of his brothers, and he doesn't think he ever loved anybody, which is probably true. On the other hand, he hated much, and most of all he hated the people, as well he might, having witnessed the Revolution. That early impression was ineffaceable, and though for the moment he adopted the cant of the time, the democracy was always loathsome to him. Maybe nothing less than the Revolution could have opened the doors of France to his genius, but it was his genius which alone could have crushed the fury of the mob. For himself, he regretted his solitary, quiet death. It spoiled the scenic effect of his life, and no man was ever more careful of scenic effect than he. "To die at Borodino," he said, "would have been to die like Alexander; to be killed at Waterloo would have been a good death; perhaps Dresden would have been better; but no better at Waterloo. The love of the people, their regret." He died almost alone, surrounded by a few of the mediocrities, whom, as Studhal says, he always loved. But it was as *l'Empereur* that his body entered the Invalides, and it is as *l'Empereur* that he will live with the life of the world.

GERMAN CHARACTERISTICS.

The intelligence from China as to the attitude of the German officers towards the Chinese is apt to come as a shock to humane minds. We can scarcely doubt the accuracy of the letters written by German soldiers which show that the commands of the Emperor are being literally carried out in China. We all recollect that the Kaiser

ordered his faithful troops to act as the Huns did many centuries ago—not, indeed, literally, but in a like spirit. This attitude of mind is characteristic, we will not say of German, but of Prussian politics, which are and have been frankly based on the Machiavellian doctrine of creating the sensation of fear. You can rule, said the great

Florentine, by affection or by terror; if you cannot make use of the former, you must use the latter method.

This doctrine has generally been held by the North Germans, and it was never more in vogue there than it is now. The stern discipline of generations has impressed itself on the mind and character of the people, and the very difficulty involved in making the German nation has rendered the famous advice of Machiavelli the more dear to the German mind. It is, of course, a mere truism to say that we are all ready to make unusual sacrifices in proportion as the end we have in view is the more difficult of attainment. The end of German unity was one specially difficult of attainment. For centuries Germany had been as truly a "geographical expression" as was Italy according to Metternich. Germany had been partly a rather shadowy Imperial Power, the assumed successor of the Roman Empire, partly a series of free cities with a very noble and splendid civic life, partly a number of feudal States, partly ecclesiastical principalities. It was divided by the Reformation into Protestants and Catholics, whose enmity precipitated the Thirty Years' War—a war from the terrible effects of which Germany only recovered about the middle of our century. The attempt at unity under the Confederation fell through owing to the opposition of Prussia and Austria, and it was not till 1870, after generations of incoherence, that a united Germany was really made. Such an effort seemed, and was, prodigious, and it is easy to understand that, when once the aim was reached, that aim seemed to justify any means.

Hence it is that the utter lack of German public spirit which (outside the Court of Frederick the Great) characterized the Germany of the last century, gave way to the vigorous patriotism and *§8ps* of our own time. Lessing

said quite plainly that he was not a patriot. Goethe said that he did not know what patriotism meant and was glad to be without it. Kant was more interested in the French Revolution than in anything Prussian. Compare this attitude with that of to-day, when the sense of German unity and greatness seems to dominate all minds, and to have created a megalomania which is admittedly a typical German product. This feeling has been carried into German political philosophy, where theories as to the omnipotence of the State have been constructed which are wholly incompatible with essential ideas of human liberty. There can be no question that an ardent faith in Pan-Germanism, and in the inherent virtues and powers of the German people, is now erected into a fundamental belief in Germany.

This sense of German prowess and attainment has carried with it many inevitable implications. The old Germany was simple and domestic, the new is lavish and collectivist—by which we do not intend to refer to its widespread Socialism, but to the encroachment of its collective over its private life. It is doubtful if any more rapid transformation has ever occurred in human history than that which has changed German life since the Empire. Max Müller told, in a very interesting way, the story of his native town, Dessau, in his early days—the simple musical parties, the homely gatherings of highly cultured people. The Dessau of that time, as he admitted, is now practically extinct. The huge modern German city with its miles of "flats," its brilliant cafés, its splendid city halls and railway stations, has taken its place and the old German simplicity of life appears to be fading away. Contentment and, we fear, the old deep German plety have declined, and the old optimism which showed itself in the "classic" German philosophy has given

place to theories born either of absolutism or anarchy, but in either case having their root in a materialism unknown to the earlier German. This materialism has expressed itself with immense power, alike in war, trade and science, and it is always directed by high intelligence. But it has made of the typical German a being more respected than loved, especially when accompanied by the German megalomania which, extended through the nation, makes even of a German country stationmaster a kind of little Moltke, acting as though the whole weight and dignity of the Empire rested upon his shoulders.

This produces some external traits not very pleasant to the traveller in Germany. The officialism of France and Italy is counterbalanced by pleasant personal qualities among the average people. Far from entering into the official spirit, one is apt to find French and Italians often revealing against it a resentment as great as one's own. But in Germany the average man identifies himself with the average official, both conspiring to impress one with the idea of a powerful, vast, strident Empire. We speak now more especially of the Prussian; the South German is a different and more human type, not associated so closely with dominating power. But North and Prussianized Germany has been so completely under the authority of the drill-sergeant, so hypnotized by the generations of Hohenzollern influence, that the military

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and bureaucratic spirit has produced a certain "mechanism in mind and morals" (to use a well-known phrase) which is just a little apt to set one's teeth grating. You feel that you are in the presence of a great people, of a people worthy of respect as regards the material, and, in some ways, the purely intellectual, aspects of life. But you ask yourself whether that greatness has not been dearly bought in respect of the lighter side of life, of its affections, its pure spontaneity. One is apt to recall the famous criticism of Aristotle on Plato; may not an imposing uniformity have been achieved at the expense of real unity?

On the other hand, one feels that a very strong bond connects German with German, in spite of political differences. One associates civil war with the so-called Latin peoples, and suspects that, even in the presence of an external foe, Frenchman might fly at the throat of Frenchman, or Spaniard at the throat of Spaniard, in the future as in the past. But there is a strong cementing power in Germany, there are strong leading motives, there is a deep underlying affection, made the more deep by a sense of past divisions and of the immense sacrifices made to bridge them over. We expect, therefore, the unity of Germany to remain as a solid fact, especially when the reign of materialism, which has bitten so deep into German life, shall have yielded to those nobler influences which we associate with the homely Germany of the past.

MAETERLINCK'S LATEST DRAMA.

"Bluebeard and Aryan, or Useless Liberation: a drama in three acts!" Such is the title of the latest work of the author of "Blind People." A translation from the MS. into German was

made, and published; the original is to appear during the coming winter. The reform of theatrical technique, which began in the theatre of dolls, is not then matured. At any rate, Maeter-

linck cares not for theatrical eloquence, he cares for something far deeper. Let us listen.

Bluebeard introduces Aryan, his sixth wife into the palace. Beneath the windows is heard the indignant shouting of an invisible crowd. What, one more? And so beautiful, the most beautiful in the country? No, it is too much; he has already drawn down too many calamities on the surrounding country! And this sixth one has courage. . . . It is true she thinks the others still live.

The indignation of the crowd increases—but Bluebeard and Aryan enter the palace. He opens for her all his treasures; here are twelve boxes arranged according to the signs of the Zodiac, each box contains jewels and costly fabrics from different countries and of different ages. Choose! Aryan is fond of jewels, and chooses—Roman jewels.

"The Roman women were beautiful and courageous." She plunges her fingers into the jewels and is delighted. Suddenly she shivers and is sad.

The sound of sad singing is borne to her from the distance. The admirer of the Roman women speaks often to Bluebeard—Does he love? It seems he loves for the first time, for this is the first time he has met with such a woman. He presses her passionately to his breast; she resists and screams. Her scream is echoed by another, it is the cry of the crowd beneath the windows of the palace, who, suspecting that there is to be another victim, threatens, throwing stones. Thereupon Aryan appears in the doorway—she is sweet and strong, and the crowd is calmed.

No, Bluebeard has never before met a woman who could dominate spirit and body.

In the second act Aryan appears as the liberator. She descends to the cellar, accompanied by a nurse, who is

trembling with fear, and breaks all the locks. The sad singing of the prisoners sounds ever louder and louder. Here they are. Here in the cellar, among the numerous pillars that support the old ceiling, they lie in a darkness that is only brightened by the feeble flame of a single lamp. There are five of them and they all tremble with fear—they answer to her call with timid moaning. But Aryan's voice, full of joy, enthusiasm and energy, animates them; they approach her, and her heart is filled with warmth and sadness. Ah! how the poor things have suffered! They cannot yet believe that they are free! They cannot believe that out in the world the spring blooms, the light shines and the lake smiles. Poor things, they have forgotten the sun! Forward then, forward! Suddenly the light in the nurse's hand expires, and they can no longer see their way. But even in the deepest darkness there shines some ray. Whence comes it? It comes from yonder, where the wall ends and the rock begins. . . . A rock in the form of an altar, for it is said that this was formerly a church. Well, then, forward toward the crevice, and move away the stones! But the prisoners are overwhelmed with fear. Beyond that rock there is a sea—it will flow over them, it will annihilate them! Aryan is sad. Poor sisters! Have you then grown accustomed to the darkness. . . . "Why did you wish that I should free you, if you are so fond of the darkness? Why did you weep if you were happy?"

Let us work! . . . a few more blows and the stone is broken, and the light streams in, overflowing with life, freedom and delight.

Third act.—In the hall of the palace, the liberated prisoners stand before the boxes of jewels, and alas! they are all like Eve, who, as Helne says, having eaten of the apple of knowledge,

stretched forth her arm for a fig-leaf. Scarcely has a woman grown up, than the first thing she does is to purchase a dress. Thus, also, act Bluebeard's liberated wives; they cover nature and make her hideous. The one whose golden hair shone even in the darkness, covers it with ribbons; Aryan throws them away, in order "to free that light once more." She whose shoulders breathe a charm and ask a caress, now covers them with silk; another hides both neck and arms. Aryan accomplishes the work of liberation; "No wonder," says she of Bluebeard, "had he wished even for a hundred wives, he had none."

Then Bluebeard comes. But ere he can enter the palace he must pass that wall-like crowd that threatens him. The women are frightened and speechless. Aryan alone calls for help and begs for mercy. The people blind Bluebeard and bring him to the palace—the women flee. Aryan alone comes forward to meet the crowd, and by her queen-like mien imposes respect and obedience. And she frees the prisoner, whilst the others are only able to lament. Having freed the man, she kisses him and departs. "Where?" asked the other women. "Far away yonder, where I am still needed. Who among you will go with me? None, although the door is open, and beyond it there is freedom, and the bright light of the silver stars?"

They look at her with indifference, the "woman of the North" alone throws herself on her bosom and thus remains. Then the door of the palace is closed—behind Aryan.

Such is the drama written with extreme simplicity, and full of strong emotions. It possesses great poetical beauties, all fresh and simple as field flowers.

The poet's relation to nature is magnificent. For a long time he has felt her slightest tremors and heard her

most secret whispers, but, strange to say, he has drawn from her only sad sounds, at times threatening and full of despair, as in "The Blind Men" and "The Uninvited Guest."

This time nature spoke to him, her language thrilled through him, awaking warm, joyful, passionate sounds, voices of the worship of nature. Here nature is a god, deliverance, happiness. As her light penetrates the darkness, the poet is intoxicated, and his words become an inspired hymn.

Aryan (*when the light enters the prison*): "I can see nothing. I cannot open my eyes, for long strings of pearls strike against my eyelids. I know not what flows in on me . . . is it Heaven, or sea? Is it the wind or the world? My hair is a stream of light. I see nothing, but I hear everything; thousands of rays strike on my ears . . ."

Such hymns sang the ancient mystics, in honor of life. This whole poem is devoted to light, every symbol therein quivers with light.

For Bluebeard is the personification of all men. He sought a woman, and he found but feeble figures, covering and disfiguring their bodies, not covering their souls—for they had none. Consequently, he threw them into Gothic prisons, that cover the vision of the world with the remains of altars, beyond which there may be sea, or heaven—or infinity. At length things change. "The crowd," sometime invisible, begins to rebel against this state of affairs. Above it stands the figure of a woman, simple and great, and Bluebeard immediately offers her his hand. She is fond of jewels, she loves a beautiful life, but drawing from the treasury of her great soul, she carries gifts also to others. The ideal woman to her are the Roman women, "beautiful and courageous." She enters the dark prison, despite the superstitious fear of the nurse, despite lack of will and childish weakness; she breaks the

stones of the ancient altars, and admits the light, the light. . . .

Being unable to see that some spiritual revolution is already taking place, the crowd seizes Bluebeard, in whom it recognizes only an oppressor, unaware of the fact that he himself has suffered deeply. Simple-minded, merciless, although generous, crowd! It humiliates itself before a woman, who comes bringing light; and she dresses Bluebeard's wounds, and leaves him amongst the women. Have they understood the experiments of the past?

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Do they know that salvation lies in imitating the virtues of the Roman women, who united courage with clear, unveiled beauty?

The poet doubts. The liberated prisoners rushed to the boxes full of glittering jewels and costly stuffs; they remained with the man who, to them, was an executioner, and they left their liberator, their good genius, alone—in solitude.

It is thus one may interpret Maeterlinck's last symbols.

S. C. de Soissons.

WEAKNESS.

He was not strong enough to break away
From ignorant bonds which hinder men and blind;
To snap the prison-bars of yesterday,
Or curb the natural follies of mankind.

Nature and Beauty called to him, but here
Old thoughts and aspirations bound him still—
Abortive hopes, and dreams confused and sere,
Darkened the vague horizon of his will.

Part of Eternal Beauty—crowned with light—
A thought of God—even thus and thus his soul
Conceived itself—but subtle hands of night
Wove webs of shadow and obscured the whole.

He heard the ages calling, and the skies
And mountains, and, to greet him, song on song
Of deathless poets crowned with music rise—
Yet swooned 'midst clashing chords of right and wrong.

Once, rising on wide wings of song, he grew
Strong for a moment, but the accustomed chain
Of sterile weakness round about him drew
And dragged him helpless to the earth again.

Literature.

Margaret Sackville.

BOOKS AND AUTHORS.

Dr. Josiah Strong's "Religious Movements for Social Betterment" (The Baker & Taylor Co.) is a succinct account of institutional churches, Christian associations and other modern forms of activity which combine the religious and social motives.

Josiah Flynt and Francis Walton are joint authors of the "Powers that Prey," published by McClure, Phillips & Co. The predatory powers referred to are, as might be guessed, gamblers and other social parasites, who live upon the community. Josiah Flynt, as is generally known, is the pen name of J. Frank Willard, and Francis Walton conceals the identity of a college professor who is deeply interested in social problems.

Here is a pleasing anecdote from the latest volume of Mr. Hare's autobiographical reminiscences:—

I went to luncheon at Lady Castletown's; she was not come in from church, but I went up into the drawing-room. A good-looking, very smart young lady was sitting there, with her back to the window, evidently waiting also. After a pause, I made some stupid remark to her about heat, or cold, &c. She looked at me, and said, "That is a very commonplace remark. I'll make a remark. If a woman does not marry she is nobody at all, nothing at all in the world; but if a man marries at all he is an absolute fool." I said, "I know who you are; no one but Miss Rhoda Broughton would have said that." And it was she.

Professor Ira N. Hollis of Harvard University has written the history of "The Frigate Constitution" (Houghton, Mifflin & Co.) with a fulness of detail which makes his volume equivalent to

a sketch of the whole period when the American navy was under sail. The reader of his narrative, which even landsmen will find one of absorbing interest, will gain from it a clear idea of the conditions under which the American navy originated and in which it found its early development, and also of the stirring history which it helped to make. Written *con amore*, out of a full professional knowledge and an abounding enthusiasm, this history of "Old Ironsides" quickens the pulse like a tale of adventure.

The Rev. Dr. William Newton Clarke dedicates his "A Study of Christian Missions" (Charles Scribner's Sons) to "the pastors of America;" and to them doubtless the book makes its first appeal. But it would be a pity if it were not also to fall into the hands of laymen of all denominations, for it presents not only the missionary character and motive of Christianity, but recognizes the present crisis and the immediate needs of the mission cause, and is at once a source of information and inspiration. It is just, well-considered and illuminating.

Mrs. Richmond Ritchie, Thackeray's daughter, in a paper in The Cornhill Magazine, tells of a character called Fairy Hopstick, whom Thackeray created as a rival fairy to the Fairy Blackstick, and who appears in the manuscript of "The Rose and the Ring," but of whom there is no mention in the book itself. This fairy used to wheedle and flatter and tell lies, and she hated the Fairy Blackstick, under whose sincere glances she seemed to shrivel up and disappear altogether. There is a picture of Hopstick dwindling and

dwindling under the gaze of Blackstick, and Mrs. Ritchie still remembers seeing the gold pen emphasizing the lines of the shadows that brought out Hopstick's malevolent glare, as she vanished in billous spite.

"The Story of Nineteenth Century Science," as told by Henry Smith Williams, M.D. (Harper & Bros.), is a rapid and graphic survey, "popular" without being patronizing, of the great achievements and discoveries of the century in the departments of astronomy, paleontology, geology, meteorology, physics, chemistry, biology, anatomy, physiology, scientific medicine and experimental psychology. Separate chapters are given to each of these sciences, and the volume closes with a brief consideration of some unsolved scientific problems. There are numerous portraits and personal sketches of the leaders in research in all these different fields, and a thorough index adapts the book to convenient reference. Dr. Williams has done extremely well a very useful and inspiring bit of work.

The third volume of Professor Elisha Gray's series on "Nature's Miracles" is devoted to Electricity and Magnetism, and it gives a practical and popular exposition, in the simplest terms, of electrical and magnetic phenomena. It is a fascinating book, crowded with clear descriptions of the fruits of modern science in these departments, of which most of us are content to make daily use, without pausing long to consider how marvellous they are, or to how great an extent they have revolutionized the conditions of existence. It is a real service which Professor Gray renders in these volumes—each of which is independent of the others—and they may be commended to readers young or old. Fords, Howard & Hulbert.

Those fortunate ones who learned to love "*Le Petit Chose*" first in the original will take a generous as well as a selfish delight in the translation of this idyl, as it comes from Little, Brown & Co., in their new edition of Daudet's works. Wearing gracefully its quaint Anglicized title, "*Little What's-His-Name*," with an attractive binding in blue and gold, and a clear page that fascinates the attention, the outward appearance of this first favorite is all that could be desired. The translation, by Jane Minot Sedgwick, shows both vigor and delicacy. It is matter for congratulation that so worthy a rendering of this classic is at hand for the many who still feel less at home with Daudet in French than in English. The volume contains also that simple and charming little story, "*La Belle Nivernaise*."

A strong, devout and closely-reasoned statement of "The Scientific Evidences of Revealed Religion" is contained in the volume bearing that title, in which are published the lectures delivered in 1900 on the Bishop Paddock foundation, in the General Theological Seminary of the Protestant Episcopal Church, by the Rev. Charles Woodruff Shields, D.D., professor of the Harmony of Science and Revealed Religion in Princeton University. Astronomy, geology and anthropology are the sciences which Professor Shields lays under tribute in this volume for evidence in support of revealed religion; and he purposes in a later volume to present similar evidences from the sciences of psychology, sociology and comparative religion and from the philosophical sciences. There is need of just such a re-statement as this, by a well-equipped and conservative theologian, of the arguments for religion which rest on scientific foundations. Professor Shields possesses the first requisite for a clear

style, which is clear thinking; and his work, although it will compel thought from the reader, will well repay it. Charles Scribner's Sons publish the volume.

Among several hitherto unpublished letters, written by Lowell to E. A. Duyckinck, which are published in the Bulletin of the New York Public Library, is one which shows Lowell in a very pleasant light. It appears that Cornelius Mathews, author of some long since forgotten poems, had criticized Lowell sharply, and Lowell retaliated in the "Fable for Critics" with a little fling at Mathews which was not very ill-natured. But the recollection of it disturbed Lowell, and some six years afterwards he wrote to Duyckinck thus:

There is something I have often had upon my heart to say to you, and I will say it here. I mean about my quarrel with Mr. Mathews. I knew that he had done me a great injustice about a matter very trifling in itself. I knew that he had assailed me in print, and I retaliated, as I would not do now. The traditions of literary animosities would justify all I did and more, but my heart has never justified it, and I have been sorry for it more times than I can think of since. But when I wrote the "Fables for Critics," I had no thought of publishing it. The greater part of it was written in a week and for my own amusement. I was full of animal spirits and thoughtless, and so it all came about. I know that these repentances are the rods for our youthful indiscretions, and that it is our penance that we can never recall what we have done. But at least I feel better for having said I did wrong, and for holding out my hand at length for reconciliation. It goes against my pride a little, and so much the better.

From an interesting collection of popular misquotations, collected by the

Pall Mall Gazette, the following specimens are taken,—the misquotation, in each case, coming first, and then the correct rendering:

"The tongue is an unruly member."—
—"But the tongue can no man tame; it is an unruly evil." (James iii, 8.)

"Charity covereth a multitude of sins."—"Charity shall cover the multitude of sins." (1 Peter iv, 8. Rev. Vers.: "Love covereth a multitude of sins.")

"A little knowledge is a dangerous thing."—"A little learning is a dangerous thing." (Pope's Essay on Criticism. Misquoters are hereby given notice that Pope was a man of intelligence, and did not write nonsense.)

"A man convinced against his will Will hold the same opinion still."—"He that complies against his will is of his own opinion still." (Butler. Hudibras. Part III. Butler also was a man of intelligence.)

"Make assurance doubly sure."—"Make assurance double sure." ("Maccbeth." Act IV, Sec. 1.)

"Benedick the married man." should be "Benedick the married man." ("Much Ado About Nothing.")

"Falleth as the gentle dew."—"Drop-peth as the gentle rain." ("Merchant of Venice." Act IV, Sc. 1.)

"The man that hath no music in his soul."—"The man that hath no music in himself." (Ibid. Act V, Sc. 1.)

"Falls like Lucifer Never to rise again."—"Falls like Lucifer Never to hope again." ("Henry VIII." Act. III, Sec. 2.)

"Thick as autumn leaves in Vallombrosa."—"Thick as autumnal leaves that strew the brooks in Vallombrosa." (Milton, Paradise Lost, Book I.)

"Fresh fields and pastures new."—"Fresh woods and pastures new." (Milton, Lycidas.)

"Just cause and impediment."—"Cause or just impediment." (Book of Common Prayer.)

"The even tenour of their way."—"The noiseless tenour of their way." (Gray's Elegy.)